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ABSTRACT

First in a series of statistical reports on personnel providing vision and eye care assistance, the report presents data collected by the Bureau of Census (geographic location, age, sex, education, type and place of employment, training, specialties, activities, and time spent at work) concerning opticians actively engaged in their profession during February and June 1969. Opticians engaged in the manufacture or production of optical equipment are not included in the report. Males outnumber females in the profession by a ratio of approximately 8:1 among active opticians; however female representation is increasing, particulary among the younger opticians. Median age was 45 years for males and 39 years for females; median length of time in the occupation was 23 years for males and 9 years for females. Education and training of opticians corresponds to increased education of the general population. Opticians are unequally distributed geographically with more than one-half employed in the Middle Atlantic, East North Central, and South Atlantic States; the ratio of opticians to the population is also unequally distributed. While retail optical establishments employed the majority of opticians, 3 of every 10 were self-employed. Appendixes include supplementary survey information. (EA)

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Series 14
Number 3

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Opticians Employed In Health Services

United States-1969

Statistics are presented on the geographic location, age, sex, education, type and place of employment, training, specialties, activities, and time spent at work for active opticians engaged in providing health services. Data presented were collected by the Bureau of the Census under contract with the National Center for Health Statistics from opticians in the 50 States and the District of Columbia.

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Under the legislation establishing the National Health Survey, the Public Health Service is authorized to use, insofar as possible, the services or facilities of other Federal, State, or private agencies.

In accordance with specifications established by the National Center for Health Statistics, the Bureau of the Census, under a contractual arrangement, participated in planning the survey and collecting the data.

Vital and Health Statistics-Series 14-No. 3

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SYMBOLS

Data not available	- - -
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

OPTICIANS EMPLOYED IN HEALTH SERVICES

Henry S. Mount, M.A., *Division of Health Resources Statistics*

INTRODUCTION

This is the first in a series of reports that will present statistics on the 1968-69 national mail surveys of personnel engaged in providing assistance to persons with vision and eye care problems in the United States. The surveys collected data on opticians, optometrists, and ophthalmologists.

Data provided in this report concern only the opticians who were actively engaged in opticianry during the months of February and June 1969 (tables 1-39). This report does not include information about those opticians engaged in the manufacture or production of optical equipment, either for the optical industry generally or for the vision and eye care industry in particular. The opticians of concern in this report are those most directly involved in providing health care for vision and eye care problems. Data concerning inactive opticians are also excluded from this report because of the lack of response on the part of inactive opticians who were included in the survey. (For a detailed discussion of the methodology of this survey, as well as a discussion of the responses from active and inactive opticians, see appendix I. Appendix II contains definitions of certain terms used in this report, and appendix III contains copies of the forms used in the survey.)

Prior to the survey, little information was available concerning opticians providing vision and eye care to the general population. Most of the data available could be traced directly or indirectly to the decennial census of the population in which the occupations of individuals were identified or to estimates from their respective professional associations.[1] A major problem with the available data was the inability to separate individuals dealing with vision and eye care problems from those engaged in the manufacture of optical equipment. As an example, the 1960 Census of Population identified 20,349 employed opticians.[2] However, it could not be determined what proportion of this number was engaged in health activities related to vision and eye care and what proportion was engaged solely in the manufacture of optical equipment. Aside from the data obtained from the decennial census, the only other major contributing sources were lists and numbers of graduates from the schools of opticianry.[3] Again, however, no distinction could be made between the proportion subsequently engaged in vision and eye care work and the proportion engaged in the manufacture of optics. This report concerns only those opticians actively engaged in providing health care.

SOURCES AND QUALIFICATIONS OF THE DATA

Data presented in this report are based on a mail survey conducted by the U.S. Bureau of the Census under contract to the Division of Health

Resources Statistics of the National Center for Health Statistics.

Questionnaires were mailed to individual opticians requesting information about their demographic characteristics, general education, methods of training, type and amount of employment, number of years in opticianry, and their current activity status.

The names and addresses of the opticians were obtained through a combination of methods and sources: A survey of opticianry establishments conducted in 1968 provided the names and addresses of opticians employed in these establishments; lists of opticians licensed or registered in several States were obtained; and lists of opticians were provided to us by their professional associations. The multiplicity of sources required extensive treatment before a suitable mailing list was obtained. Particularly, the list required extensive elimination of duplications before mailings could be initiated.

Without the cooperation and assistance of the many establishments, licensing agencies within States, the Guild of Prescription Opticians, and the individual opticians responding to the questionnaires, these data would not be available. To all of these groups and individuals our thanks are extended for their assistance and cooperation.

Data presented in this report are subject to the same errors that beset any survey. They are dependent on the accuracy and completeness of the responses to the questionnaires and are subject to human errors occurring during the coding and punching of questionnaire data. In addition, these data have a further limitation. They can be considered only as estimates of the true figures. This is a result of two significant factors. First, response to the survey was less than 100 percent; second, and perhaps even more important, no known figure exists as to the exact number of opticians employed or engaged in opticianry activities related to the elimination or alleviation of health problems. For a more detailed review of the limitations, see appendix I.

SEX, AGE, AND YEARS IN OPTICIANRY

Sex

Opticianry is primarily a male occupation. This is clearly indicated by the data obtained from the survey. There were indications, however, that females are becoming increasingly represented—particularly among the younger opticians. A number of differences in the characteristics of active opticians as well as in the types and places of their work are identifiably related to their sex.

Males outnumbered females by a ratio of approximately 8 to 1 among active opticians (figure 1). This was considerably greater than the 5 to 3 sex ratio that existed in 1969 for males and females in the civilian labor force as a whole.[4] Despite the difference in magnitude, there was a similarity in the distributions of sex ratios for individual age groups among both the civilian labor force and the opticians. Both among the civilian labor force and opticians, the sex ratios for individual age groups were equal to or greater than the ratios for all ages combined except among persons under 25 years of age, i.e., the youngest age group. In this age group the sex ratios were considerably smaller. Among opticians the ratio was 1.7 to 1, still in favor of

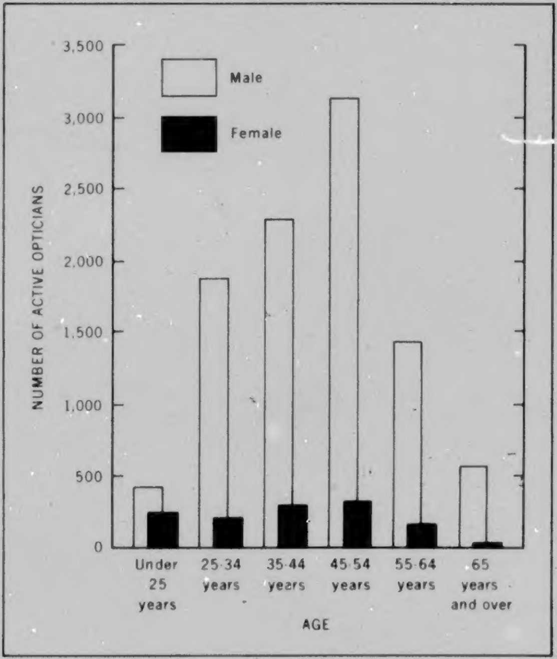

Figure 1. Number of active opticians, by age and sex: United States, 1969.

Table A. Number and percent distribution of active opticians by number of weeks per year and hours per week worked, according to sex: United States, 1969

Sex	Under 48 weeks per year				48-52 weeks per year					
	Number	Total	Hours per week		Number	Total	Hours per week			
			1-34	35 or more			1-34	35-40	41-49	50 or more
		Percent distribution				Percent distribution				
All active opticians	362	100.0	50.5	49.5	10,601	100.0	5.9	39.9	35.8	18.4
Male	293	100.0	46.8	53.2	9,416	100.0	5.0	38.0	37.0	20.0
Female	69	100.0	66.7	33.3	1,185	100.0	13.3	54.9	25.7	6.1

males, whereas for the civilian labor force it was only 1.2 to 1, likewise in favor of males.[4]

Given the current trend of increased participation of females in the labor force, the similarities in the distributions of sex ratios have implications for the future sex ratio among opticians. The reduced sex ratio among the youngest opticians suggests a potential reduction in the overall sex ratio at some time in the future. Several decades of a continued lower sex ratio will be required to reduce the ratio for the entire group because opticians under age 25 represent only 6 percent of the total.

Male opticians are predominately older than their female counterparts. And as will be shown later, when age is greater, the percentage of self-employed opticians is also greater. The differences in age, status, and responsibilities of the males probably account for most of the differences between the sexes in terms of the amount of time worked and the types of businesses in which males and females are working.

Twice the percentage of females worked less than 48 weeks per year when compared with males. In addition, two-thirds of the females working less than 48 weeks per year also worked reduced hours per week (1-34 hours per week) as compared with one-half of the males working a short year (table A).

Among opticians working a complete year (48-52 weeks), larger percentages of females were working fewer hours per week than were males. Thirteen percent of the females working a complete year worked less than 35 hours per week, yet only 5 percent of the males worked similar hours per week during the full year.

The differences attributable to the sex of opticians are in some measure merely a reflection of the differences in the ages of the male and female opticians. How much of these differences are attributable to either sex or age

Table B. Number and percent distribution of active opticians by age, according to sex: United States, 1969

Sex	Number	Total	Age in years					
			Under 25	25-34	35-44	45-54	55-64	65 and over
		Percent distribution						
All active opticians	10,963	100.0	6.2	19.1	23.5	31.5	14.4	5.3
Male	9,709	100.0	4.4	19.3	23.6	32.3	14.7	5.7
Female	1,254	100.0	20.1	17.2	23.3	25.1	12.3	2.0

will have to await the test of time. At present one can only speculate as to which of the two characteristics is more closely associated with the differences that currently exist between male opticians and their female counterparts.

Age

The smaller sex ratio among the youngest opticians had an effect on the median ages of opticians of the two sexes. The median age for males was 45 years. Among females, the median age was 6 years younger—39 years.

Different proportions of each sex under 25 years of age were almost entirely responsible for the differences that existed in the median ages for the two sexes. Less than 5 percent of the males were in the youngest age group, yet 20 percent of the females were in this group (table B).

The ages of opticians were directly related to their primary form of employment. The majority of all active opticians were salaried employees—two-thirds of the total. Nevertheless, the percentages of opticians in given age groups who were self-employed or salaried were directly related to their ages (figure 2). The greater the age, the larger the percentage of self-employed. Certainly this is not unexpected. Age and length of time in opticianry are directly related. Also related to age is the accumulation of funds and knowledge needed to operate a business. It is predictable that age and self-employment are related.

An interesting fact that emerges from this study is the probability of being self-employed. Despite the fact that two-thirds of the active opticians are salaried, the chance of being a self-employed optician by retirement age is

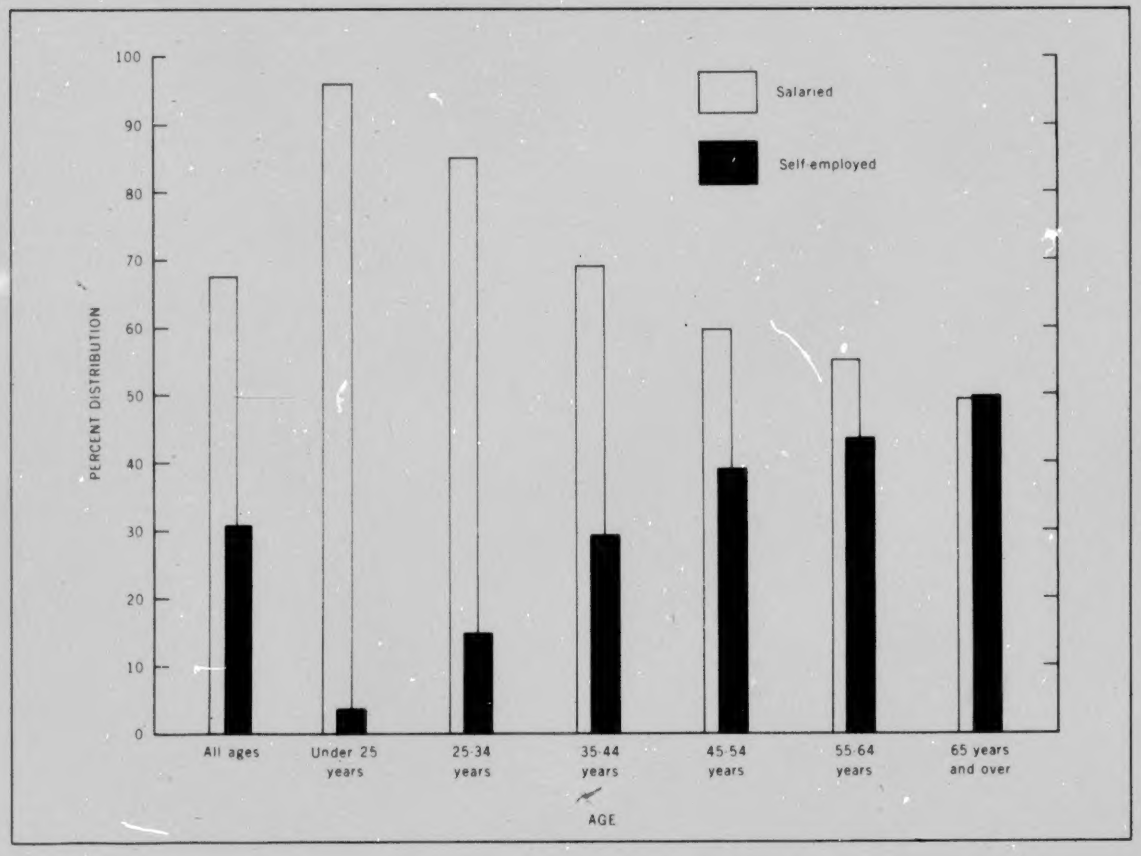

Figure 2. Percent distribution of salaried and self-employed opticians, by age: United States, 1969.

approximately 50-50, at least insofar as these data indicate (figure 2).

Years in Opticianry

There was a considerable difference in the length of time male and female opticians had been active in this occupation. The median length of time in opticianry for males was 23 years. Among female opticians, the median was only 9 years. Fifty-three percent of the females as compared with only 19 percent of the males had less than 10 years in opticianry.

Figure 3 indicates the number of opticians (total, male, and female) in each group with specific lengths of time spent in opticianry. It can be seen that very few females were among opticians who had completed 30 years or more in the occupation. In contrast, they were highly represented among opticians with less than 5 years—almost 40 percent of the group. The concentration of females among the newest entrants to opticianry was not the effect of age differences between the sexes. A larger percentage of females of every age were concentrated in this group than were males of comparable ages.

Length of time in opticianry was inversely related to female participation (table C). Less than 5 percent of the opticians with at least 20 years in opticianry were females, whereas 40 percent of the opticians with less than 5 years in opticianry were females.

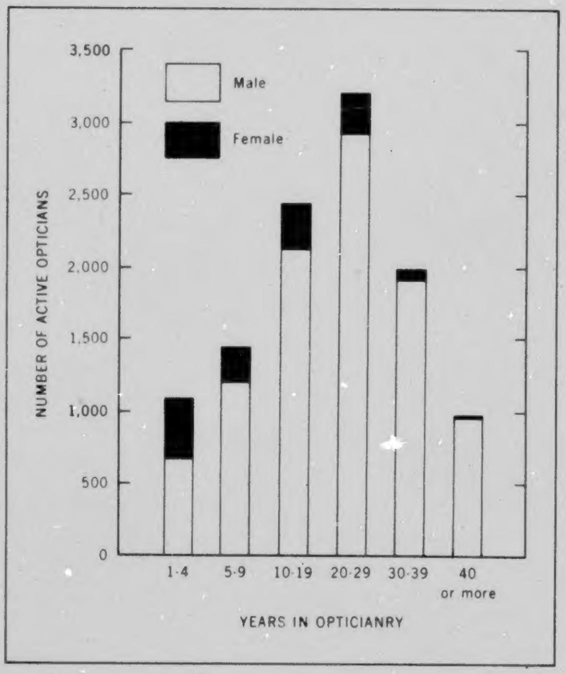

Figure 3. Number of active opticians, by number of years in opticianry and sex: United States, 1969.

Attrition is undoubtedly a factor. Some females over the years entered the occupation, dropped out, and stayed out. A basic question

Table C. Number and percent distribution of active opticians by sex, according to number of years in opticianry: United States, 1969

Sex	Total	Number of years in opticianry 1-4	5-9	10-19	20-29	30-39	40 or more
	Number						
All active opticians	10,963	1,087	1,423	2,407	3,100	1,980	966
	Percent distribution						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Male	88.6	60.5	83.4	87.6	93.9	95.9	98.0
Female	11.4	39.5	16.6	12.4	6.1	4.1	2.0

cannot be answered from the present data: How much of the difference in the ratios is attributable to larger attrition rates for females, and how much is attributable to an influx of female opticians? The answer will have to await future data to provide the basis for a trend analysis.

A relationship also exists between the length of time spent in opticianry and the probability that an individual has received formal education in opticianry. The two are inversely related (table D). This is as would be expected. Greater emphasis is placed on formal education now than in the past as evidenced by the longer duration in school for greater numbers now than in the past. Surprisingly, however, opticians with less than 5 years in the occupation did not conform to the pattern established by those who had been in opticianry longer. A smaller percentage of the opticians with the least number of years in the occupation (1-5 years) received education in opticianry than did those with more years in opticianry (5-9 or 10-19 years).

The explanation for the break in the pattern can again be traced, at least in part, to the sex ratio among the youngest and newest members of opticianry. Ten percent of the males and only 3 percent of the females had specialized education in opticianry. Consequently, because females represented 40 percent of the opticians with the least number of years in opticianry, their lack of opticianry education had a much stronger effect on the outcome for the group as a whole. The effect was that females helped to prevent the pattern from remaining in force among the newest opticians.

EDUCATION AND TRAINING

Years of Schooling

Dramatic changes are taking place in the number of years of schooling obtained now as compared with just a few decades ago. (Years of schooling refers to the education received in high school and college.) This is evident both in the statistics for the U.S. population generally and for opticians specifically. Younger persons are completing more years of schooling than did their older counterparts.

In the U.S. population in 1960, 62 percent of the cohort 45-54 years of age had received less than 4 years of high school education. Of those 35-44 years of age, 48 percent had received the same amount. Among the cohort aged 25-34, the percentage was 42 percent.[5] This was a drop of 20 percentage points among persons with a maximum difference in age of 30 years.

Among opticians, the change was slightly less, possibly because opticians had received more years of schooling than the general population.

Table D. Number and percent distribution of active opticians by attainment of specialized education in opticianry, according to number of years in opticianry: United States, 1969

Specialized opticianry education	Total	Number of years in opticianry					
		1-4	5-9	10-19	20-29	30-39	40 or more
	Number						
All active opticians	10,963	1,087	1,423	2,407	3,100	1,980	966
	Percent distribution						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Some	9.0	8.5	16.3	11.9	7.0	6.7	3.1
None	91.0	91.5	83.7	88.1	93.0	93.3	96.9

(See table 3 for detailed data.) Of the opticians 55-64 years of age, 29 percent had received less than 4 years of high school education. Among opticians 45-54 and 35-44, the respective percentages receiving the same amount of education were 15 and 11. In these groups, there was a difference of 17 percentage points. Opticians closely approximate the changes in the length of schooling that are occurring in the general population. (These age groups were selected for the opticians so that the data presented for the U.S. population in 1960 would approximate what would be found for the U.S. population in 1969 and similar age groups of the 1969 opticians.)

Surveys conducted at one point in time do not provide trend data. Current trends in educational attainment among the general population, however, make it safe to assume that among opticians the number of years of schooling being obtained conforms to the general pattern of rapid increase with each passing decade. Within 30 to 40 years, we can expect that at least 90 percent of all active opticians will have at least a high school education. This is based on the fact that less than 7 percent of the two youngest groups of opticians (under 25 and 25-34 years of age) have not completed high school. This is in contrast with the 25 percent of the U.S. population aged 25-29 who in 1969 had not completed high school.[6]

The current trend toward increased college education is not evident among opticians (table 3). In 1969, only 7 percent of the active opticians were college graduates. No increase was found among the younger active opticians when compared with those who were older—e.g., 7.5 percent of opticians 25-34 years of age had at least 4 years of college as compared with 7.3 percent of those 55-64 years of age. There are, however, trends toward partial college educations. Larger percentages of younger opticians attended college for 1 to 3 years than did older opticians.

The present data suggest that should current trends in education continue, we will probably find the following pattern emerging: a substantial decrease in the percentage of opticians without 4 years of high school; large increases in the percentages graduated from high school and completing some college; but only a small increase in the percentage who have obtained college degrees. In addition to a continuation of current educational trends, there must also be a continuation in current requirements for opticianry jobs if these predicted trends are to be fulfilled.

Specialized Education and Training

Opticianry is not an occupation that requires specialized education. Only 9 percent of all currently active opticians ever attended schools providing specialized education in opticianry. Training in opticianry has generally been obtained after jobs were secured.

However, there appears to be a trend underway toward increased specialized education. The following table indicates this trend by presenting the percentages of persons in each age group with at least some specialized education in opticianry:

Total	Years of age					
	Under 25	25-34	35-44	45-54	55-64	65 and over
9.0	13.3	14.6	9.9	7.0	4.8	3.3

Younger opticians attended specialized schools more frequently than older opticians. This finding helped to account for the lack of any indication of an increase in the percentages of younger opticians completing college as compared with older opticians. It may be that specialized schools are being attended, either in conjunction with some college education or in lieu of it. Whatever the specifics of the situations, there can be little doubt that younger opticians are receiving more specialized education than their predecessors.

Again, we find that the sex of opticians is a differentiating variable. The amount of specialized education for the two sexes was completely different. The following table reclassifies the above data according to sex:

Sex	Total	Years of age					
		Under 25	25-34	35-44	45-54	55-64	65 and over
Male	9.9	18.8	15.7	11.0	7.6	5.3	3.3
Female	2.6	4.0	5.6	1.4	1.3	1.3	4.0

Data for females indicate a confused pattern with regard to specialized education. Data for males, on the other hand, indicate an even stronger trend than was indicated when males and females were not differentiated.

The cross-classification by sex illustrates additional facts. Except for the oldest opticians (65 years of age and over), larger proportions of males than of females obtained specialized educations. More significantly, the disparity between the percentages of males and females obtaining specialized educations was greater for the younger age groups than for the older. This disparity will increase in the future unless some change takes place to reverse the current situation.

Given the current sex ratio, a sharp rise in the future can be expected in the ratio of opticians with specialized educations as compared with those without specialized educations. An increase may not take place, however, if females join the ranks in larger numbers than males. This latter trend is based on the assumption that females continue their current ratio insofar as specialized education is concerned. A continuing influx of females without specialized education could nullify or even reverse the current situation of increased specialized education.

Why are males obtaining more specialized education than females? The answer can be found in figure 4. Forty-four percent of all active opticians who attended schools of opticianry did so in military schools. (These are now civilian opticians. Members of the Armed Forces were not included in this survey.) As in many other occupations, the characteristics of this group are in many ways an outcome of the secondary effects of military service. Males

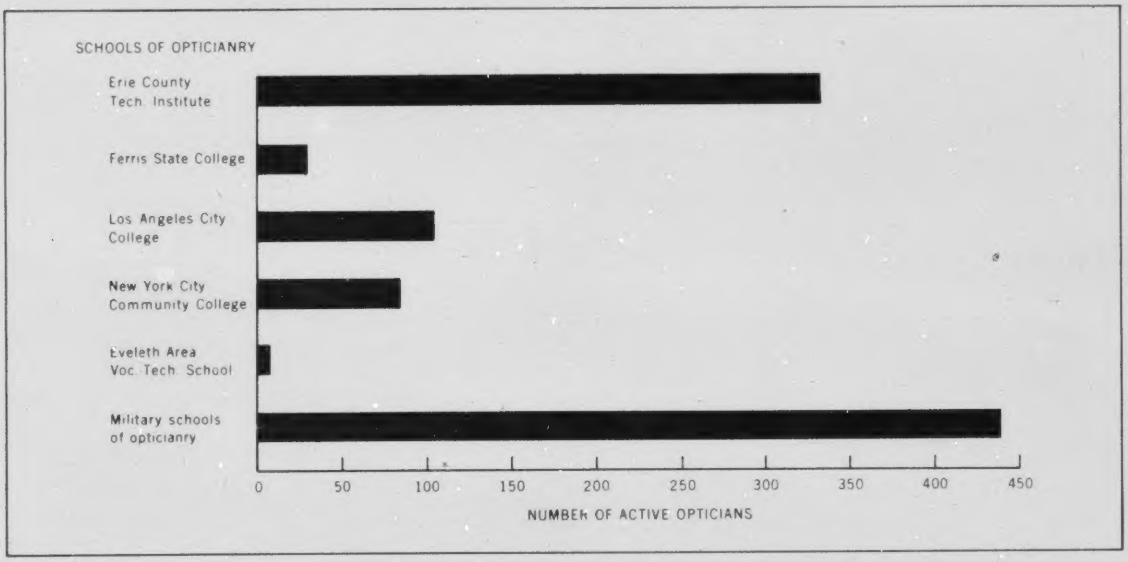

Figure 4. Number of active opticians, by schools of opticianry attended: United States, 1969.

vastly outnumber females in the military. Military schools of opticianry dominate the output from such schools. Males, therefore, receive a larger share of specialized education in opticianry than do females. This is not the complete answer, however.

Aside from military schools of opticianry, respondents listed five civilian schools. (These are not all of the schools providing specialized education in opticianry; rather, they are only those schools listed by respondents to the questionnaires.) Among the civilian schools, Erie County Technical Institute provided specialized opticianry education for one-third of all active opticians with specialized education (figure 4). Sixty percent of the opticians attending civilian schools attended this institute. The total number attending all opticianry schools was 989.

Only 9 percent of all active opticians ever attended opticianry schools. The bulk of opticians received training on their jobs. More than one-half of those receiving specialized education received additional training on their jobs. How much their specialized educations reduced the amount of training required, if at all, cannot be determined by the data from this survey.

Opticians attending civilian schools of opticianry received additional training less often than those attending military schools (table E). One reason may be that the educations obtained in military schools were aimed at different aspects of opticianry, aspects more suited to military purposes. Hence, those trained in military schools may have required reorientation.

Data in table E also indicate wide differences in the percentages of opticians receiving training on their jobs among those attending different civilian opticianry schools. Only 22 percent of opticians attending Erie County Technical Institute received additional training on their jobs. In contrast, approximately 70 percent received training on their jobs among those attending either New York City Community College of the City University of New York or Los Angeles City College. The current data do not provide any information as to why such large differences

Table E. Number and percent distribution of active opticians by training received on their jobs, according to schools of opticianry attended: United States, 1969

Type of training at place of employment	Total	Schools of opticianry attended						
		None	Erie County Technical Institute	Ferris State College	Los Angeles City College	New York City Community College	Eveleth Area Voc.-Tech. School	Military schools of opticianry
	Number							
All active opticians . .	10,963	9,974	331	29	104	83	4	438
	Percent distribution							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
On the job	61.8	65.3	6.3	18.9	35.1	16.3	55.7	40.6
Registered apprentice	4.6	4.6	3.1	-	1.6	21.4	44.3	2.5
Other training or education . .	5.0	4.9	4.9	5.8	9.4	1.6	-	6.7
On the job, registered apprentice.	6.7	6.9	1.6	16.5	1.6	19.6	-	5.9
On the job, other	13.5	14.0	4.0	-	16.7	2.4	-	12.5
Registered apprentice, other . .	1.2	1.1	1.1	-	-	1.2	-	2.6
On the job, registered apprentice, other	3.2	3.2	0.7	3.5	4.9	6.1	-	5.7
No training at place of employment	4.0	-	78.3	55.3	30.7	31.4	-	23.5

existed. Future studies might do well to explore the reasons for these differences.

Three types of training were provided opticians at their places of employment—on the job, registered apprenticeship, and a residual category "other training or education." On-the-job training was the most frequent type specified (table E). Among active opticians not attending opticianry schools, 90 percent listed "on-the-job" as one form of training they had received. Sixty-five percent listed only on-the-job training and no other type of training or education was listed. Therefore, approximately six-tenths of all active opticians received only on-the-job training to equip them to perform their duties. Ninety percent of all active opticians received no training outside of what was provided to them at their places of employment—i.e., no specialized education.

Different types of establishments are not generally associated with specific types (or combinations of types) of training. It was found, however, that wholesalers of ophthalmic goods and department store optical units tended to confine their training activities to on-the-job training more often than other types of establishments.

The self-classification of specialties by the opticians is associated with different kinds of training received (table F). Nondispensing opticians received on-the-job training more frequently than other types of opticians. Seventy-one percent of the nondispensing opticians received only on-the-job training. An additional 19 percent received on-the-job training in conjunction with some other type of training.

The number of specialties dispensing opticians classified themselves as performing was associated with the percentages of the groups who had received on-the-job training as their only form of preparation (table F). Sixty-seven percent of the dispensing opticians without other specialties indicated that on-the-job training was their only form of preparation. In contrast, only 51 percent of the opticians who listed specialties of dispensing optician, optical

Table F. Number and percent distribution of active opticians by training received at places of employment, according to self-classification of specialties: United States, 1969

Training received at places of employment	Total	Dispensing optician with other specialties					Nondispensing optician
		No other specialty	Optical mechanic	Contact lens technician	Optical mechanic, contact lens technician	All other specialties	
	Number						
All active opticians	10,963	3,849	2,962	894	1,289	1,337	632
	Percent distribution						
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
On the job	61.8	67.3	64.0	54.0	51.3	52.2	71.2
Registered apprentice	4.6	4.7	4.3	4.5	5.9	4.1	3.3
Other	5.0	4.2	5.7	5.0	5.7	5.5	4.0
On the job, registered apprentice	6.7	5.4	8.5	5.8	7.8	6.9	5.2
On the job, other	13.5	10.7	11.0	18.7	19.3	19.6	10.9
Registered apprentice, other	1.2	0.8	0.9	2.1	1.8	1.7	0.4
On the job, registered apprentice, other	3.2	1.9	2.5	5.0	4.1	6.8	3.0
No training received	4.0	5.0	3.1	4.9	4.1	3.2	2.0

mechanic, and contact lens technician specified on-the-job training as their only form of preparation.

Almost all opticians (96 percent) received some form of training at their places of employment.

GEOGRAPHIC DISTRIBUTION

Opticians are unequally distributed geographically. More than one-half of all active opticians are employed in three of the nine geographic divisions—Middle Atlantic, East North Central, and South Atlantic (figure 5). More than one-tenth of the opticians are employed in the State of New York, where more than a thousand opticians are employed. This State contrasts sharply with such States as Vermont and Wyoming; only eight opticians were employed in each of the latter two States (figure 6 and table G).

Similar to the distribution of opticians, the ratio of opticians to the population is also unequally distributed (figure 7 and table G). Throughout the country there was an average of 5.5 active opticians for each 100,000 persons. Within individual States and the District of Columbia, the ratio ranged from 1.0 in Maine to 17.6 in the District of Columbia. More than 40 percent of the States had less than five active opticians per 100,000 civilian population; two-thirds had a ratio of less than 6.

The North Central, South, and West Regions of the United States had ratios of 5.0, 5.3, and 5.2 opticians per 100,000 population, respectively. The Northeast Region had a ratio of 6.5, between 1.2 and 1.5 more opticians per 100,000 population than any of the other three regions.

Previously it was pointed out that older persons have greater probability of being self-

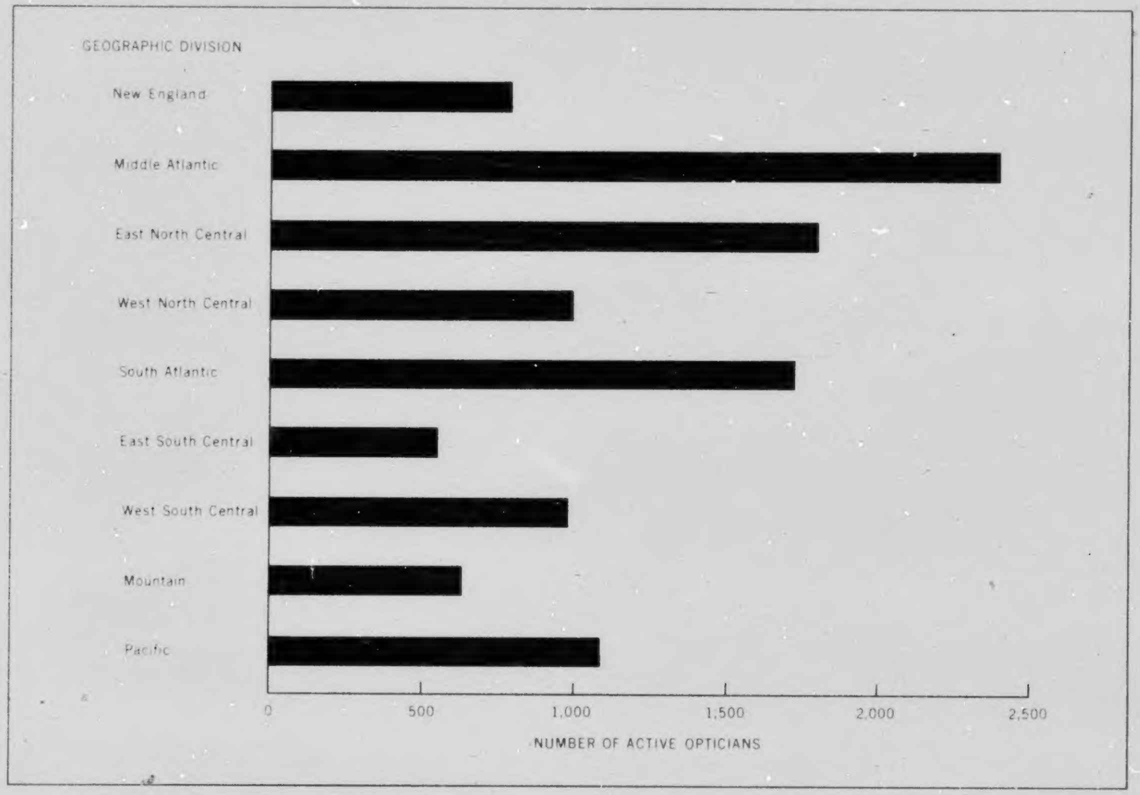

Figure 5. Number of active opticians, by geographic division of employment: United States, 1969.

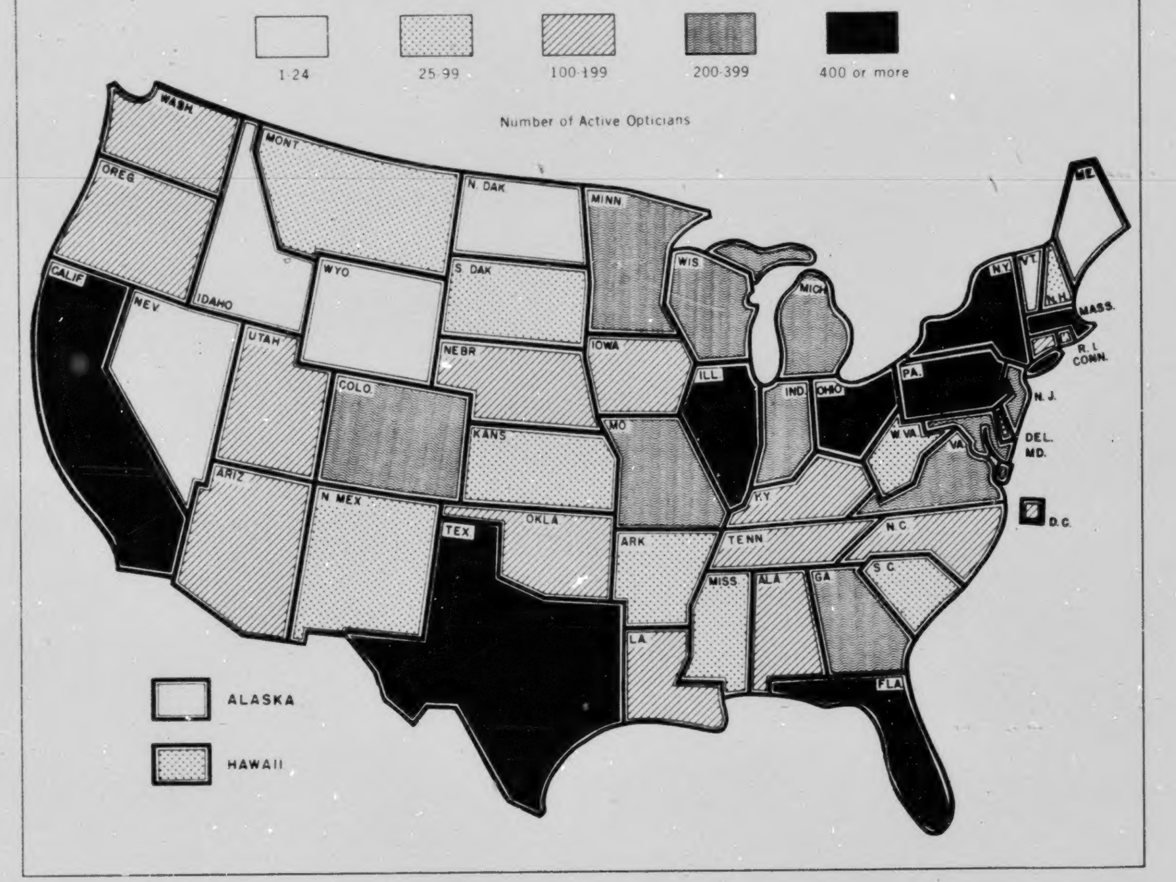
1-24
25-99
100-199
200-399
400 or more
Number of Active Opticians
WASH.
OREG.
CALIF.
NEV.
IDAHO
MONT.
WYO.
UTAH
ARIZ.
COLO.
N. MEX.
N. DAK.
S. DAK.
NEBR.
KANS.
OKLA.
TEX.
MINN.
IOWA
MO.
ARK.
LA.
WIS.
ILL.
MICH.
IND.
OHIO
KY.
TENN.
MISS.
ALA.
GA.
FLA.
S.C.
N.C.
VA.
W.VA.
PA.
N.Y.
VT.
N.H.
ME.
MASS.
R.I.
CONN.
N.J.
DEL.
MD.
D.C.
ALASKA
HAWAII

Figure 6. Number of active opticians per State: United States, 1969.

employed. Table H indicates that the Northeast has the largest percentage of opticians in each age group among those over age 45. (Persons in the age groups over 45 also account for 51 percent of the total.) The Northeast Region likewise accounted for 38 percent of all self-employed opticians. One could speculate that there is also a larger number of retail establishments in this region, which might also account for the higher ratio of opticians to the population in the Northeast. Only future research, however, will determine the validity of this type of speculation.

No question can exist that the Northeast has the largest concentration of older, active opticians. This region accounts for approximately one-third of all active opticians between the ages of 45 and 64. It accounts for more than one-half of those 65 years of age and over. Unfortunately, the data do not provide information on how long the older opticians have been in this region. There is no way of knowing whether these persons started work in this region or moved to the area at some later time.

There are considerable differences in the types of education and/or training that opticians

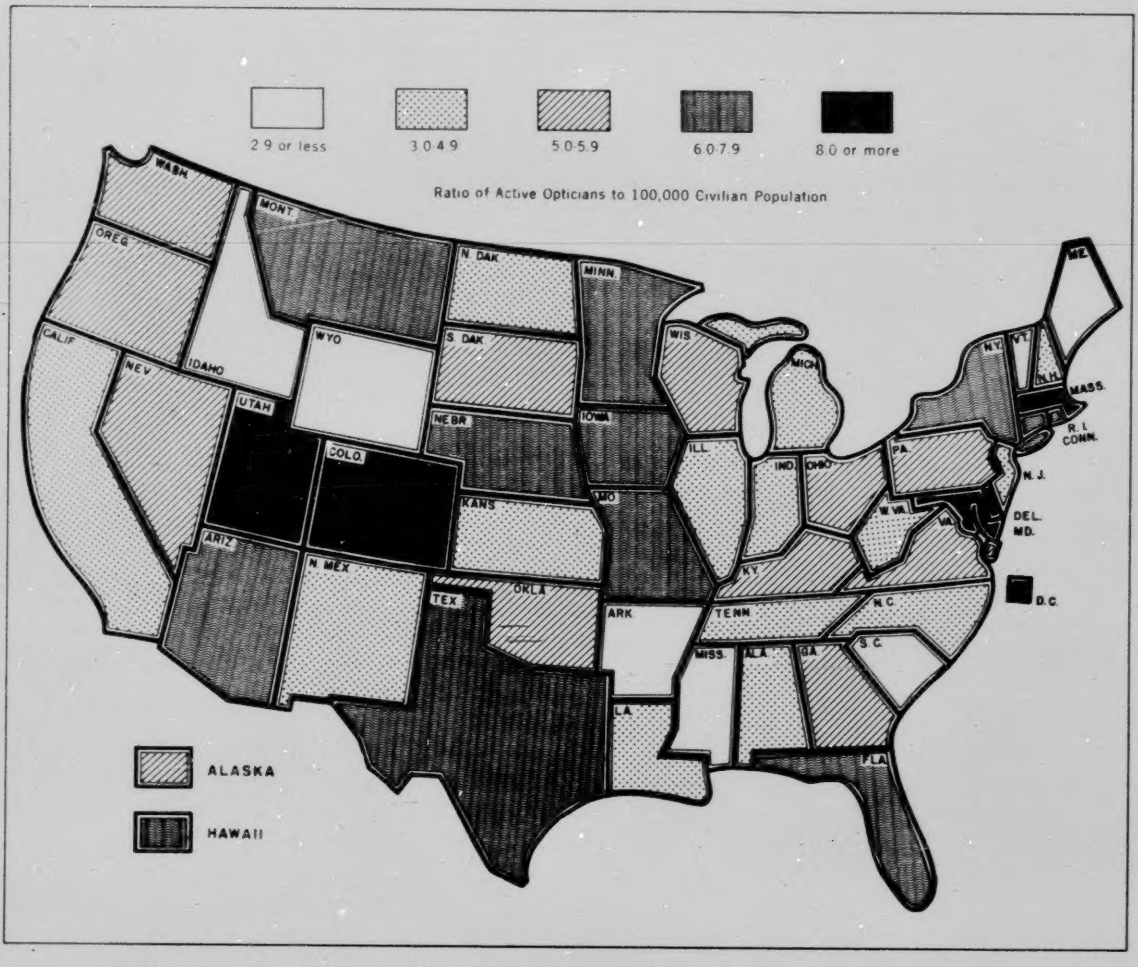
2.9 or less
3.0-4.9
5.0-5.9
6.0-7.9
8.0 or more
Ratio of Active Opticians to 100,000 Civilian Population
WASH.
OREG.
CALIF.
NEV.
IDAHO
MONT.
WYO.
UTAH
COLO.
ARIZ.
N. MEX.
N. DAK.
S. DAK.
NEBR.
KANS.
OKLA.
TEX.
MINN.
IOWA
MO.
ARK.
LA.
WIS.
ILL.
MICH.
IND.
OHIO
KY.
TENN.
MISS.
ALA.
GA.
FLA.
S.C.
N.C.
VA.
W. VA.
PA.
N.Y.
VT.
N.H.
ME.
MASS.
R.I.
CONN.
N.J.
DEL.
MD.
D.C.
ALASKA
HAWAII

Figure 7. Ratio of the number of active opticians per 100,000 civilian population per State: United States, 1969.

working in different regions of the United States have received (table J). Opticians in the Northeast accounted for 60 percent of the opticians who received only specialized education as their form of preparation; yet they represent only 29 percent of all opticians. In contrast, opticians in the North Central Region represented 26 percent of all opticians, but only 8 percent of those limited to specialized education as their form of preparation. Opticians receiving preparation only through specialized education, however, represented only a very small percentage of all opticians—4 percent.

Preparation by on-the-job training only, the form of training received by 62 percent of all opticians, is distributed fairly closely according to the distribution of all opticians in the four regions. The North Central Region had a slightly higher representation in this form of preparation than its representation among all opticians and the Northeast had slightly less.

It would appear that although the percentage of opticians receiving only specialized education is small there is a very heavy concentration of these opticians in the Northeast. The uneven distribution is evident; the reasons are not. One

Table G. Population, number of opticians, and ratio of opticians to the population, by State: United States, 1969

Location	Civilian resident population, in thousands[1]	Number of opticians	Opticians per 100,000 population
United States	[2] 199,682	[2] 10,963	5.5
Alabama	3,496	163	4.7
Alaska	249	14	5.6
Arizona	1,665	109	6.5
Arkansas	1,986	33	1.7
California	19,055	732	3.8
Colorado	2,045	256	12.5
Connecticut	2,989	199	6.7
Delaware	533	48	9.0
District of Columbia	784	138	17.6
Florida	6,256	434	6.9
Georgia	4,532	254	5.6
Hawaii	737	55	7.5
Idaho	713	21	2.9
Illinois	10,986	426	3.9
Indiana	5,109	212	4.1
Iowa	2,780	170	6.1
Kansas	2,278	99	4.3
Kentucky	3,180	159	5.0
Louisiana	3,705	152	4.1
Maine	965	10	1.0
Maryland	3,701	316	8.5
Massachusetts	5,431	473	8.7
Michigan	8,750	366	4.2
Minnesota	3,695	283	7.7
Mississippi	2,330	64	2.7
Missouri	4,611	277	6.0
Montana	688	53	7.7
Nebraska	1,438	113	7.9
Nevada	447	23	5.1
New Hampshire	713	30	4.2
New Jersey	7,082	337	4.8
New Mexico	977	48	4.9
New York	18,284	1,357	7.4
North Carolina	5,077	165	3.2
North Dakota	604	20	3.3
Ohio	10,720	566	5.3
Oklahoma	2,529	130	5.1
Oregon	2,028	106	5.2
Pennsylvania	11,782	698	5.9
Rhode Island	884	66	7.5
South Carolina	2,617	57	2.2
South Dakota	654	37	5.7
Tennessee	3,950	167	4.2
Texas	10,989	667	6.1
Utah	1,041	118	11.3
Vermont	438	8	1.8
Virginia	4,486	254	5.7
Washington	3,329	179	5.4
West Virginia	1,818	62	3.4
Wisconsin	4,230	235	5.6
Wyoming	317	8	2.5

[1] U.S. Bureau of the Census: Population Estimates. *Current Population Reports.* Series P-25, No. 436, Jan. 1970, and No. 442, Mar. 1970.

[2] Totals may not add due to rounding.

reason may be the concentration of opticianry schools in the East. More specialized research will have to be undertaken to define the reasons more specifically.

TYPE AND FORM OF EMPLOYMENT

Principal Place of Employment

Retail optical establishments employ the majority of opticians. These establishments account for 7,614 of the 10,963 active opticians (figure 8). This amounts to almost 70 percent of the total. No other type of place accounts for as much as 10 percent.

Conclusions reached on the basis of opticianry data will obviously be biased toward the characteristics and behavior of opticians in retail establishments unless specific types of places are taken into account. When proper account is taken, we find some interesting differences among the various types of places, both in the characteristics of the opticians ~~and~~ in their behavior. (See tables 13 and 14 for detailed data.)

Table H. Number and percent distribution of active opticians by geographic region, according to age: United States, 1969

Geographic region	Total	Age in years					
		Under 25	25-34	35-44	45-54	55-64	65 and over
	Number						
All active opticians	10,963	682	2,093	2,579	3,449	1,582	578
	Percent distribution						
All regions	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Northeast	29.0	20.8	24.2	24.0	30.2	36.3	51.0
North Central	25.6	38.8	29.1	26.7	23.5	20.7	17.8
South	29.7	27.6	32.6	33.0	29.3	26.1	20.3
West	15.7	12.8	14.1	16.3	17.0	16.9	10.9

Table J. Number and percent distribution of active opticians by geographic region, according to education or training: United States, 1969

Geographic region	Total	Type of education or training				
		Specialized education	On-the-job training	Registered apprentice	Other	More than 1 type
	Number					
All active opticians	10,963	436	6,778	500	546	2,703
	Percent distribution					
Total	100.0	100.0	100.0	100.0	100.0	100.0
Northeast	29.0	60.4	25.1	44.5	42.9	27.9
North Central	25.6	7.7	28.2	20.0	17.4	24.4
South	29.7	18.7	30.9	23.5	26.5	30.5
West	15.7	13.2	15.8	12.0	13.2	17.2

It appears that different types of establishments employ opticians with varying lengths of time in opticianry, most likely because of differing requirements of background and experience. Opticians employed by ophthalmic goods wholesalers are distinct in that on the average they have been in opticianry more than 20 years. This is a considerably longer period of experience than that shown by opticians in other groups. Opticians working for wholesalers must be experienced and familiar with all phases of opticianry. It is not surprising, therefore, to find that they have been in opticianry for the longest period.

Opticians working in optical departments of department stores are the opposite of those working for wholesalers—they are the least experienced. Forty-four percent of department store opticians had less than 10 years' experience.

The types of places employing opticians were also found to be related to the different types of activities engaged in by the opticians. Seventy-one percent of all active opticians were engaged

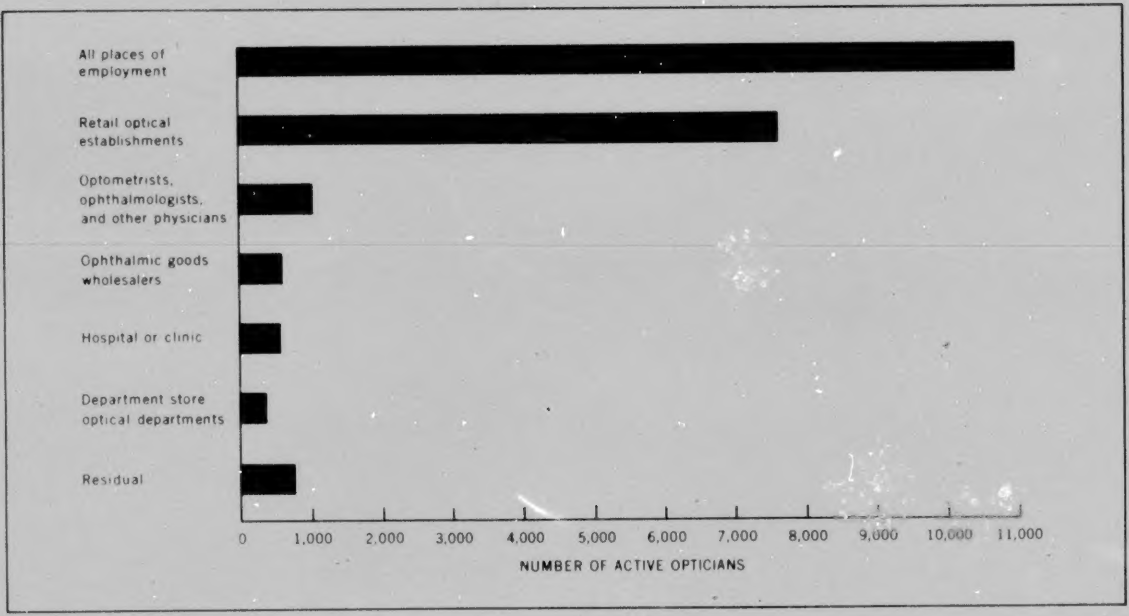

Figure 8. Number of active opticians, by principal place of employment: United States, 1969.

in shopwork (table K). Ninety-one percent fitted and adjusted eyeglasses. Twenty-seven percent fitted and adjusted contact lenses. (Note that any optician can be included in several activities—i.e., 91 percent fitted and adjusted eyeglasses as well as performed other types of activities.) These percentages varied considerably for opticians in different types of principal places of employment.

Wholesalers lead the field in terms of shopwork. Eighty percent of the opticians in wholesale work were engaged in shopwork. Retail establishments had the next highest percentage; 73 percent of their opticians did some shopwork. Hospitals, clinics, and department store opticianry departments had the smallest percentages engaged in shopwork.

On the basis of these percentages, it would appear that shopwork was related to sales of eyewear. Department stores, however, had only a small percentage of opticians doing shopwork, yet sales of eyewear probably occupied most of their time. This apparent contradiction may be explainable. Optical departments of department stores probably had less shopwork facilities on their premises. Space limitations and cost factors probably induced them to have others do their shopwork or to do their own in centralized facilities servicing several stores. This might also account for the larger percentage of females employed by these places. Females may have been less inclined to do shopwork. Thus, they may be attracted to these types of places for employment.

The vast majority of opticians engaged in fitting and adjusting eyeglasses. More than 90 percent of the opticians working in the different types of places (except those working in wholesale and the residual types of places) fitted or adjusted eyeglasses (table K). These opticians spent 40 percent of their time, or more, in this type of activity. Taking both the percentages engaged in the activity and the percentages of time spent, at least one-third of all time spent by active opticians is spent fitting and adjusting eyeglasses. It is obvious that this is a major activity of the opticians included in this survey.

Self-Employed Versus Salaried

Self-employment among opticians is common. Three of every 10 opticians are self-employed

Table K. Number and percent distribution of active opticians by percentage of hours per week spent in various opticianry activities, according to principal place of employment: United States, 1969

Percentage of hours per week spent in various opticianry activities	Total	Principal place of employment					
		Retail optical establishment	Optometrists, ophthalmologists, or other physicians	Ophthalmic goods wholesaler	Hospitals or clinics	Department store optical department	Residual
		Number					
All active opticians	10,963	7,614	1,021	595	575	386	772
		Percent distribution					
Shopwork	100.0	100.0	100.0	100.0	100.0	100.0	100.0
None	28.6	27.1	30.4	19.7	36.2	36.5	38.2
Some	71.4	72.9	69.6	80.3	63.8	63.5	61.8
1-9 percent	8.2	8.5	6.4	4.9	8.9	9.5	9.1
10-39 percent	38.0	40.2	34.3	21.8	40.4	32.0	34.4
40-59 percent	15.4	17.0	16.2	9.5	10.2	15.3	7.4
60-99 percent	7.3	5.7	11.0	26.6	3.6	6.0	6.2
100 percent	2.5	1.5	1.7	17.5	0.7	0.7	4.7
Fitting and adjusting eyeglasses	100.0	100.0	100.0	100.0	100.0	100.0	100.0
None	9.2	6.0	6.1	45.7	8.4	2.9	19.9
Some	90.8	94.0	93.9	54.3	91.6	97.1	80.1
1-9 percent	1.8	1.0	2.3	11.0	1.0	1.2	3.6
10-39 percent	15.5	15.2	18.6	30.1	11.9	8.4	9.7
40-59 percent	24.6	26.5	27.1	6.6	20.9	29.8	17.1
60-99 percent	39.4	41.7	37.5	3.9	47.6	42.4	38.4
100 percent	9.5	9.6	8.4	2.7	10.2	15.3	11.3
Fitting and adjusting contact lenses	100.0	100.0	100.0	100.0	100.0	100.0	100.0
None	73.2	73.7	63.2	90.1	61.9	83.7	70.9
Some	26.8	26.3	36.8	9.9	38.1	16.3	29.1
1-9 percent	5.0	4.8	7.9	3.1	4.2	5.2	4.9
10-39 percent	15.2	15.1	22.4	4.3	20.5	9.1	13.7
40-59 percent	2.7	2.8	2.9	1.0	5.1	0.7	2.7
60-99 percent	3.1	2.9	2.4	1.5	7.1	1.0	5.3
100 percent	0.8	0.7	1.2	-	1.2	0.3	2.5
Administrative work	100.0	100.0	100.0	100.0	100.0	100.0	100.0
None	56.7	55.6	56.8	62.7	65.2	52.0	58.0
Some	43.3	44.4	43.2	37.3	34.8	48.0	42.0
1-9 percent	12.3	13.0	12.9	6.5	9.8	12.1	11.0
10-39 percent	27.4	28.5	24.7	21.3	21.8	32.4	26.5
40-59 percent	2.4	2.0	3.9	4.6	2.2	2.7	3.4
60-99 percent	1.0	0.8	1.7	3.8	1.0	0.8	0.9
100 percent	0.2	0.1	-	1.1	-	-	0.2
Opticianry research	100.0	100.0	100.0	100.0	100.0	100.0	100.0
None	72.0	71.2	79.5	57.1	77.1	77.6	74.0
Some	28.0	28.8	20.5	42.9	22.9	22.4	26.0
1-9 percent	8.0	8.9	6.1	4.0	7.2	6.7	6.9
10-39 percent	15.8	16.6	13.1	17.8	13.2	12.4	14.2
40-59 percent	2.2	1.9	1.0	8.8	1.8	2.1	2.2
60-99 percent	1.5	1.2	0.3	8.2	0.7	0.9	1.8
100 percent	0.5	0.2	-	4.1	-	0.3	0.9

(table 33). This percentage is considerably greater than the percentage found in the general population. Among persons over 16 in nonagricultural industries, only 7 in 100 were self-employed in 1969.[7] Given the additional fact that opticianry does not require or employ vast numbers of college graduates, the implication is that this occupation offers self-employment as a goal even for those without college degrees.

What was found to be true about opticians in general applies even more to self-employed opticians; that is, self-employed opticians are more heavily concentrated in retail optical establishments than are opticians generally (table 34). Sixty-nine percent of all opticians were employed in retail optical establishments, whereas 85 percent of the self-employed were concentrated in these establishments. As a result, 38 percent of the opticians working in retail establishments were self-employed.

Rather large differences existed in 1969 as to the percentages of self-employed opticians working in different types of places (figure 9 and table 35). The largest percentage was found in retail establishments. The smallest percentage was found in hospitals and clinics. Only 5 percent of the opticians in the latter types of places were self-employed.

The distinction between self-employed and salaried was of no consequence among opticians working less than 48 weeks per year (tables 36 and 37). Neither in terms of how many weeks worked nor in terms of how many hours per week worked were there sufficient differences to warrant any comment. For all practical purposes, the two groups were indistinguishable.

It was a different matter, however, for those working a full year (48-52 weeks) (tables 36 and 37). Sixty-four percent of all self-employed opticians worked 40 hours per week or more during the full year. One-half of these worked 50 hours or more. On the other hand, 82 percent of the salaried opticians worked between 35 and 49 hours per week for the full year.

Custom dictates the causes of these differences. Salaried employees work approximately 40 hours per week. No such custom applies to the owners of businesses. They work as they choose. However, necessity frequently dictates their choices.

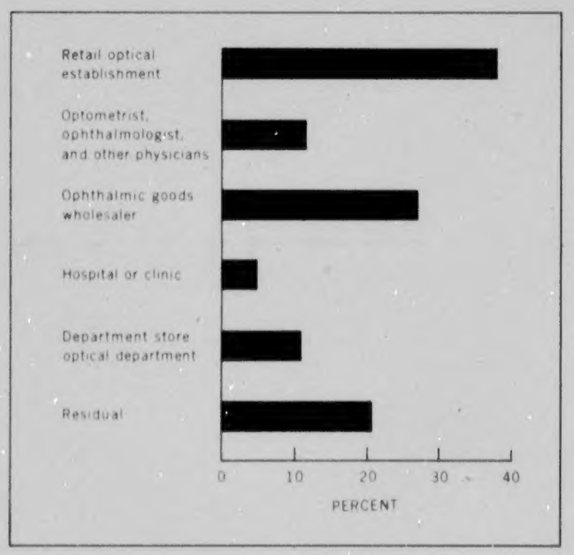

Figure 9. Percentage of active self-employed opticians, by principal place of employment: United States, 1969.

Self-Classification of Specialties

Active opticians were asked to classify themselves in terms of the scope of their activities or specialties. When these self-classifications were cross-classified with other characteristics, interesting facts emerged (tables 18-24).

Almost the entire group (94 percent) of opticians providing health care classified themselves as dispensing opticians. Dispensing optician was not the only specialty the majority of opticians assigned to themselves. Sixty percent classified themselves in at least one additional specialty.

The kind and number of specialties indicated by groups of opticians were also found to be related to some of their other characteristics. The percentages of self-employment is one such characteristic (figure 10 and table 35). Self-employed opticians were least represented among nondispensing opticians. Among dispensing opticians, they were most heavily represented among those classifying themselves additionally as optical mechanics and contact lens technicians.

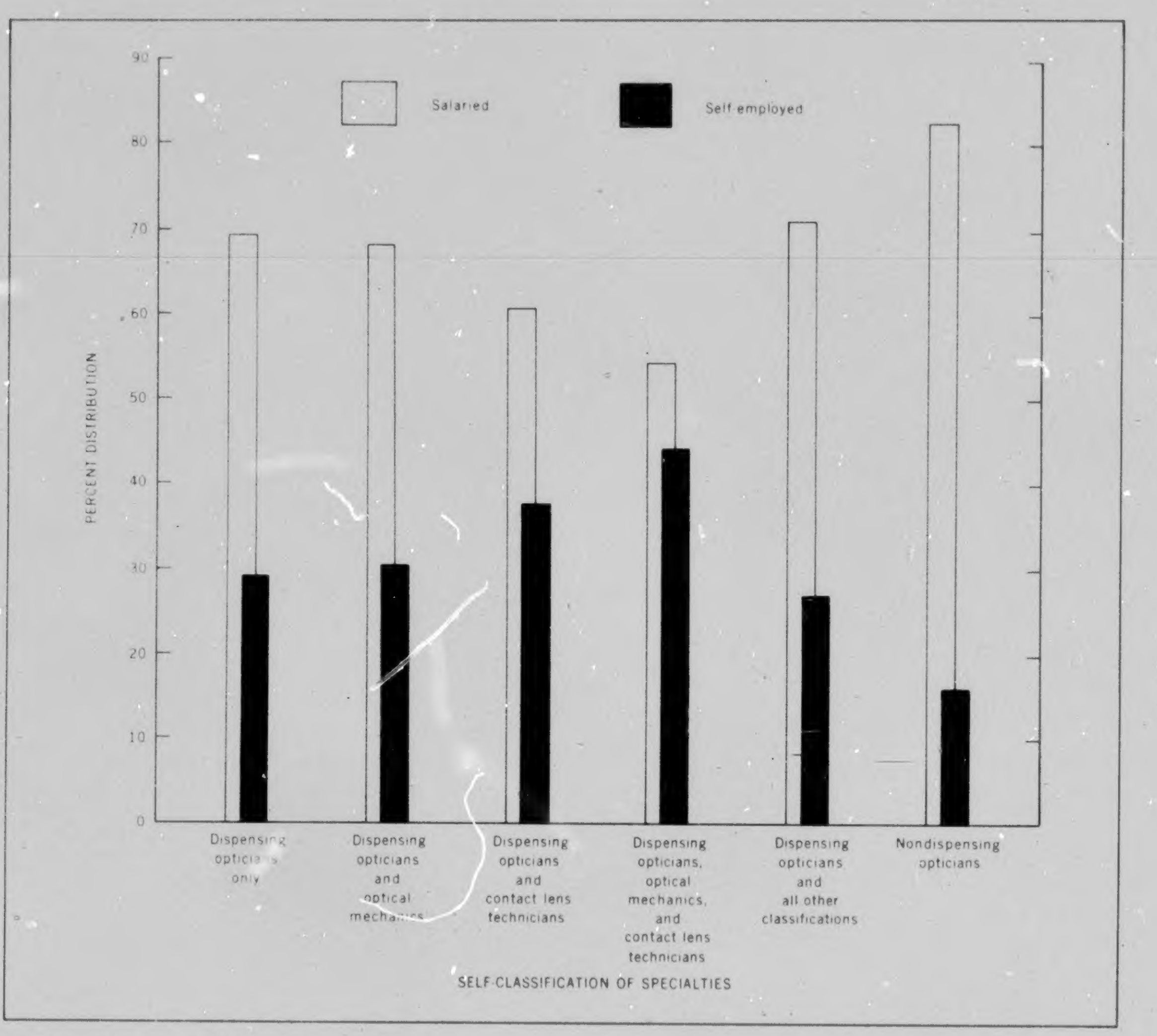

Figure 10. Percent distribution of active opticians, by selected primary forms of employment and self-classification of specialties: United States, 1969.

The data represented by figure 10 indicate that a relationship existed between the number and types of classifications of specialties among dispensing opticians and the percentage of opticians self-employed. The percentage of self-employed was smallest among those claiming only a single specialty (dispensing opticians only), was larger among those claiming two specialties, and was largest among those claiming three specialties (i.e., the maximum number illustrated).

The simplest explanation for this relationship would be that owners of establishments need to perform these multiple functions because there are no other opticians employed or because there are no other employees trained to handle them. In addition, the owner has probably been in opticianry longer, has more experience, and therefore has had more time to learn the additional requirements for the added specialties.

A number of other relationships were found to exist between the self-classifications and other characteristics of the opticians.

Three different patterns were found between the level of years of schooling and the percentages of opticians in different self-classification groups (table L). No relationship was found between the level of years of schooling and the percentages of opticians in the different levels who signified no other specialty for themselves than that of dispensing optician. In contrast, two opposing patterns were found for two other groups. Dispensing optician/optical mechanics were found to represent smaller percentages of each group with specific levels of years of schooling when the levels were greater—i.e., as years of schooling were greater, the percentages of dispensing opticians/optical mechanics were smaller. Dispensing optician/contact lens technicians had a third pattern; within each group with specific levels of schooling, the percentages of these opticians were greater when the years of schooling were greater.

The explanation for these three different relationships appears to be related to the distributions of the three groups among opticians with differing lengths of time in opticianry (table L, lower portion).

Contact lens technology is relatively new. Also, more emphasis is now placed on education than occurred 20 or 30 years ago. Consequently, contact lens technicians are comparative newcomers to opticianry and have more years of schooling than their older counterparts in opticianry.

The practitioners of optical mechanics are well established. They are an older group. They were educated when there was less emphasis placed on formal education.

The most difficult group to analyze in terms of educational attainment is the group claiming

Table L. Percent distribution of active opticians by the self-classification of specialties, according to years of schooling and number of years in opticianry: United States, 1969

Years of schooling and number of years in opticianry	Total	Dispensing optician with other specialties					Nondispensing optician
		No other specialty	Optical mechanic	Contact lens technician	Optical mechanic, contact lens technician	All other specialties	
	Percent distribution						
All active opticians	100.0	35.1	27.0	8.1	11.8	12.2	5.8
Years of schooling:							
High school:							
1 year or less	100.0	31.0	41.3	2.0	8.0	10.1	7.6
2 years	100.0	36.1	38.8	3.7	9.0	8.0	4.4
3 years	100.0	28.9	36.5	5.6	9.3	11.3	8.4
4 years	100.0	36.7	28.2	6.7	11.5	11.6	5.3
College:							
1 year	100.0	33.1	23.2	10.8	12.8	13.7	6.4
2 years	100.0	33.9	21.6	11.0	14.5	14.2	4.8
3 years	100.0	36.4	18.3	13.0	10.5	16.5	5.3
4 years	100.0	37.8	16.8	14.3	13.1	11.0	7.0
5 years or more	100.0	34.3	13.1	14.1	14.5	15.8	8.2
Years in opticianry:							
1-4 years	100.0	47.5	15.1	6.6	3.9	9.7	17.2
5-9 years	100.0	41.6	20.6	10.9	8.4	11.2	7.3
10-19 years	100.0	38.7	20.9	10.3	11.5	12.5	6.1
20-29 years	100.0	30.6	29.8	8.3	14.5	13.3	3.5
30-39 years	100.0	28.1	34.6	6.3	15.5	13.0	2.5
40 years or more	100.0	31.5	40.8	4.0	9.9	10.5	3.3

the single classification of dispensing optician. One-third of the opticians signified this classification. They represented approximately one-third of each group with differing years of schooling. They are slightly more represented among the newer members of the occupation than among the older members (table L, lower portion). In short, there is no additional way to define them, other than to simply say that they are dispensing opticians.

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Table 1. Number of active opticians, by age and geographic location of employment: United States, 1969

Geographic location of employment	All active opticians	Age					
		Under 25	25-34	35-44	45-54	55-64	65 and over
United States	10,963	683	2,093	2,579	3,449	1,582	578
Geographic region:							
Northeast	3,178	142	507	619	1,041	575	294
North Central	2,803	265	608	688	811	328	103
South	3,262	188	682	850	1,012	412	117
West	1,720	88	295	422	586	267	63
Geographic division:							
New England	786	25	97	127	307	151	78
Middle Atlantic	2,392	117	410	492	734	424	216
East North Central	1,805	154	417	485	489	196	65
West North Central	998	111	191	203	322	132	38
South Atlantic	1,727	89	334	441	548	251	64
East South Central	552	42	148	135	131	77	19
West South Central	983	58	200	274	332	84	35
Mountain	635	46	116	160	215	82	16
Pacific	1,086	42	179	262	370	185	47
State:							
Alabama	163	7	43	38	38	29	7
Alaska	14	1	5	-	6	2	-
Arizona	109	-	16	27	36	29	1
Arkansas	33	3	-	18	12	-	-
California	732	24	108	179	254	135	32
Colorado	256	25	42	70	85	28	7
Connecticut	199	4	39	34	70	35	16
Delaware	48	3	4	16	20	4	1
District of Columbia	138	10	35	28	43	17	5
Florida	434	9	83	111	142	74	15
Georgia	254	28	52	65	69	33	7
Hawaii	55	3	12	10	22	6	1
Idaho	21	-	2	6	9	4	-
Illinois	426	55	71	117	125	40	18
Indiana	212	19	48	62	56	19	8
Iowa	170	18	40	34	57	12	8
Kansas	99	8	22	21	29	19	-
Kentucky	159	9	45	44	36	20	5
Louisiana	152	14	28	46	44	15	5
Maine	10	-	1	2	4	3	-

Table 1. Number of active opticians, by age and geographic location of employment: United States, 1969—Con.

Geographic location of employment	All active opticians	Age					
		Under 25	25-34	35-44	45-54	55-64	65 and over
State—Con.							
Maryland	316	21	63	92	97	36	7
Massachusetts	473	19	42	78	173	104	57
Michigan	366	22	101	95	95	45	9
Minnesota	283	32	64	53	98	27	8
Mississippi	64	7	15	15	15	8	3
Missouri	277	32	32	59	88	49	17
Montana	53	-	16	10	21	6	-
Nebraska	113	19	18	23	32	15	5
Nevada	23	1	2	4	11	3	2
New Hampshire	30	-	6	4	16	3	1
New Jersey	337	18	48	74	116	57	24
New Mexico	48	5	12	11	13	5	2
New York	1,357	61	208	263	427	255	142
North Carolina	165	6	31	37	63	21	6
North Dakota	20	-	4	3	6	7	-
Ohio	566	49	143	135	153	65	21
Oklahoma	130	7	35	35	41	8	4
Oregon	106	5	17	29	34	17	5
Pennsylvania	698	37	154	154	190	112	51
Rhode Island	66	2	6	9	40	6	4
South Carolina	57	1	12	15	16	11	2
South Dakota	37	2	11	9	12	3	-
Tennessee	167	19	44	38	42	20	3
Texas	667	33	137	175	236	60	26
Utah	118	14	25	30	38	6	3
Vermont	8	-	3	-	5	-	-
Virginia	254	6	41	63	84	45	15
Washington	179	9	38	44	55	25	9
West Virginia	62	5	12	14	15	10	5
Wisconsin	235	9	53	76	60	27	9
Wyoming	8	1	2	2	2	1	-

Table 2. Number and percent distribution of active opticians by age, according to geographic location of employment: United States, 1969

Geographic location of employment	Number of active opticians	Total	Age					
			Under 25	25-34	35-44	45-54	55-64	65 and over
		Percent distribution						
United States	10,963	100.0	6.2	19.1	23.5	31.5	14.4	5.3
Geographic region:								
Northeast	3,178	100.0	4.5	16.0	19.5	32.8	18.1	9.3
North Central	2,803	100.0	9.5	21.7	24.5	28.9	11.7	3.7
South	3,262	100.0	5.8	20.9	26.1	31.0	12.6	3.6
West	1,720	100.0	5.1	17.2	24.5	34.0	15.5	3.7
Geographic division:								
New England	786	100.0	3.2	12.4	16.2	39.1	19.2	10.0
Middle Atlantic	2,392	100.0	4.9	17.1	20.6	30.7	17.7	9.0
East North Central	1,805	100.0	8.5	23.1	26.8	27.1	10.9	3.6
West North Central	998	100.0	11.1	19.2	20.4	32.3	13.2	3.8
South Atlantic	1,727	100.0	5.1	19.3	25.6	31.8	14.5	3.7
East South Central	552	100.0	7.6	26.8	24.4	23.8	14.0	3.4
West South Central	983	100.0	5.9	20.4	27.9	33.8	8.5	3.5
Mountain	635	100.0	7.2	18.3	25.2	33.9	12.9	2.5
Pacific	1,086	100.0	3.8	16.5	24.1	34.1	17.1	4.4
State:								
Alabama	163	100.0	4.4	26.7	23.3	23.3	17.8	4.4
Alaska	14	100.0	8.3	33.3	-	41.7	16.7	-
Arizona	109	100.0	-	14.5	25.0	32.9	26.3	1.3
Arkansas	33	100.0	10.0	-	55.0	35.0	-	-
California	732	100.0	3.2	14.8	24.5	34.6	18.5	4.4
Colorado	256	100.0	9.7	16.2	27.3	33.1	11.0	2.6
Connecticut	199	100.0	2.1	19.7	17.1	35.2	17.6	8.3
Delaware	48	100.0	5.9	8.8	32.4	41.2	8.8	2.9
District of Columbia	138	100.0	7.2	25.3	20.5	31.3	12.0	3.6
Florida	434	100.0	2.2	19.1	25.6	32.7	17.0	3.4
Georgia	254	100.0	10.9	20.7	25.5	27.2	13.0	2.7
Hawaii	55	100.0	5.4	21.6	18.9	40.5	10.8	2.7
Idaho	21	100.0	-	9.5	28.6	42.9	19.0	-
Illinois	426	100.0	13.0	16.7	27.4	29.3	9.3	4.2
Indiana	212	100.0	9.0	22.6	29.0	26.5	9.0	3.9
Iowa	170	100.0	10.7	23.8	20.2	33.3	7.1	4.8
Kansas	99	100.0	8.1	22.2	21.2	29.3	19.2	-
Kentucky	159	100.0	5.7	28.3	27.7	22.6	12.6	3.1
Louisiana	152	100.0	9.2	18.5	30.0	29.2	10.0	3.1
Maine	10	100.0	-	10.0	20.0	40.0	30.0	-

Table 2. Number and percent distribution of active opticians by age, according to geographic location of employment: United States, 1969—Con.

Geographic location of employment	Number of active opticians	Total	Age					
			Under 25	25-34	35-44	45-54	55-64	65 and over
		Percent distribution						
State–Con								
Maryland	316	100.0	6.6	19.8	29.2	30.7	11.3	2.4
Massachusetts	473	100.0	4.0	8.9	16.5	36.6	22.0	12.1
Michigan	366	100.0	6.0	27.7	25.9	25.9	12.2	2.4
Minnesota	283	100.0	11.4	22.8	18.8	34.7	9.4	3.0
Mississippi	64	100.0	10.5	23.7	23.7	23.7	13.2	5.3
Missouri	277	100.0	11.5	11.5	21.4	31.9	17.6	6.0
Montana	53	100.0	-	29.7	18.9	40.5	10.8	-
Nebraska	113	100.0	17.0	15.9	20.5	28.4	13.6	4.5
Nevada	23	100.0	4.3	8.7	17.4	47.8	13.0	8.7
New Hampshire	30	100.0	-	20.0	13.3	53.3	10.0	3.3
New Jersey	337	100.0	5.4	14.1	22.0	34.4	17.0	7.1
New Mexico	48	100.0	10.0	25.0	22.5	27.5	10.0	5.0
New York	1,357	100.0	4.5	15.3	19.4	31.5	18.8	10.5
North Carolina	165	100.0	3.7	19.0	22.7	38.0	12.9	3.7
North Dakota	20	100.0	-	20.0	15.0	30.0	35.0	-
Ohio	566	100.0	8.6	25.3	23.8	27.0	11.5	3.7
Oklahoma	130	100.0	5.4	26.9	26.9	31.2	6.5	3.2
Oregon	106	100.0	4.8	15.9	27.0	31.7	15.9	4.8
Pennsylvania	698	100.0	5.3	22.1	22.1	27.2	16.0	7.2
Rhode Island	66	100.0	2.9	8.6	14.3	60.0	8.6	5.7
South Carolina	57	100.0	1.8	21.1	26.3	28.1	19.3	3.5
South Dakota	37	100.0	4.2	29.2	25.0	33.3	8.3	-
Tennessee	167	100.0	11.3	26.7	22.7	25.3	12.0	2.0
Texas	667	100.0	5.0	20.6	26.2	35.3	9.1	3.8
Utah	118	100.0	12.2	21.6	25.7	32.4	5.4	2.7
Vermont	8	100.0	-	42.9	-	57.1	-	-
Virginia	254	100.0	2.3	16.3	24.7	33.0	17.7	6.0
Washington	179	100.0	4.9	21.0	24.5	30.8	14.0	4.9
West Virginia	62	100.0	8.2	19.7	23.0	24.6	16.4	8.2
Wisconsin	235	100.0	3.9	22.5	32.6	25.6	11.6	3.9
Wyoming	8	100.0	12.5	25.0	25.0	25.0	12.5	-

Table 3. Number of active opticians, by age and selected characteristics: United States, 1969

Characteristic	All active opticians	Age					
		Under 25	25-34	35-44	45-54	55-64	65 and over
All active opticians	10,963	683	2,093	2,579	3,449	1,582	578
Sex:							
Male	9,709	431	1,877	2,286	3,134	1,428	553
Female	1,254	252	216	292	316	154	25
Self-classification of specialties:							
Dispensing optician only	3,849	292	797	888	1,080	539	253
Dispensing optician and optical mechanic	2,962	129	420	619	1,039	547	208
Dispensing optician and contact lens technician	894	39	232	266	252	91	14
Dispensing optician, optical mechanic, and contact lens technician	1,289	42	214	343	485	171	36
Dispensing optician and all other specialties	1,337	69	255	320	464	183	46
Nondispensing optician	632	112	176	143	129	51	21
Principal place of employment:							
Retail optical establishment	7,614	431	1,434	1,759	2,402	1,161	427
Optometrist, ophthalmologist, or other physician	1,021	70	205	238	322	127	59
Ophthalmic goods wholesaler	595	24	86	158	215	92	21
Hospital or clinic	575	39	123	146	178	75	14
Department store optical department	386	51	99	90	91	41	14
Other	772	67	146	188	242	85	44
Weeks per year and hours per week worked:							
Under 48 weeks:							
1-34 hours	183	9	12	28	42	40	52
35 hours and over	179	10	29	20	62	31	27
48 to 52 weeks:							
1-34 hours	623	49	81	124	162	87	120
35-40 hours	4,228	310	843	934	1,293	646	202
41-49 hours	3,796	225	765	912	1,256	518	120
50 hours and over	1,953	79	363	560	634	259	57
Years of schooling:							
High school:							
1 year or less	587	5	28	70	161	176	146
2 years	536	8	47	95	156	151	79
3 years	588	25	70	119	201	129	44
4 years	5,120	349	989	1,278	1,753	590	160
College:							
1 year	1,241	98	272	312	369	153	37
2 years	1,659	136	405	400	457	208	54
3 years	454	31	124	101	120	59	20
4 years	576	24	114	160	172	81	26
5 years or more	203	6	44	44	61	35	12
Education in opticianry:							
Education	989	91	306	256	241	77	19
No education	9,974	592	1,787	2,323	3,208	1,505	559
Training in opticianry:							
On the job	6,778	482	1,193	1,554	2,095	1,047	407
Registered apprentice	500	35	107	136	151	55	15
Other	547	9	43	96	232	123	43
On the job, registered apprentice	739	52	212	200	190	68	17
On the job, other	1,483	45	289	336	536	207	70
Registered apprentice, other	127	2	18	36	52	14	5
On the job, registered apprentice, other	354	14	72	94	125	38	11
No training at place of employment	436	42	160	126	68	30	10

Table 4. Number and percent distribution of active opticians by age, according to selected characteristics: United States, 1969

Characteristic	Number of active opticians	Total	Age					
			Under 25	25-34	35-44	45-54	55-64	65 and over
		Percent distribution						
All active opticians	10,963	100.0	6.2	19.1	23.5	31.5	14.4	5.3
Sex:								
Male	9,709	100.0	4.4	19.3	23.6	32.3	14.7	5.7
Female	1,254	100.0	20.1	17.2	23.3	25.2	12.3	2.0
Self-classification of specialties:								
Dispensing optician only	3,849	100.0	7.6	20.7	23.1	28.1	14.0	6.6
Dispensing optician and optical mechanic	2,962	100.0	4.4	14.2	20.9	35.1	18.5	7.0
Dispensing optician and contact lens technician	894	100.0	4.3	26.0	29.8	28.2	10.1	1.5
Dispensing optician, optical mechanic, and contact lens technician	1,289	100.0	3.2	16.6	26.6	37.6	13.2	2.8
Dispensing optician and all other specialties	1,337	100.0	5.2	19.1	24.0	34.7	13.7	3.5
Nondispensing optician	632	100.0	17.7	27.8	22.6	20.4	8.1	3.4
Principal place of employment:								
Retail optical establishment	7,614	100.0	5.7	18.8	23.1	31.5	15.2	5.6
Optometrist, ophthalmologist, or other physician	1,021	100.0	6.9	20.1	23.3	31.5	12.4	5.7
Ophthalmic goods wholesaler	595	100.0	4.1	14.5	26.5	36.0	15.5	3.5
Hospital or clinic	575	100.0	6.7	21.3	25.4	30.9	13.1	2.5
Department store optical department	386	100.0	13.3	25.6	23.2	23.7	10.7	3.6
Other	772	100.0	8.7	19.0	24.3	31.3	11.1	5.7
Weeks per year and hours per week worked:								
Under 48 weeks:								
1-34 hours	183	100.0	4.9	6.6	15.5	23.0	21.9	28.2
35 hours and over	179	100.0	5.8	16.2	11.1	34.5	17.3	15.0
48 to 52 weeks:								
1-34 hours	623	100.0	7.9	13.0	19.8	26.1	14.0	19.2
35-40 hours	4,228	100.0	7.3	19.9	22.1	30.6	15.3	4.8
41-49 hours	3,796	100.0	5.9	20.1	24.0	33.1	13.6	3.2
50 hours and over	1,953	100.0	4.1	18.6	28.7	32.5	13.3	2.9
Years of schooling:								
High school:								
1 year or less	587	100.0	0.9	4.8	12.0	27.4	30.0	24.9
2 years	536	100.0	1.4	8.7	17.8	29.1	28.3	14.7
3 years	588	100.0	4.3	12.0	20.3	34.2	21.9	7.4
4 years	5,120	100.0	6.8	19.3	25.0	34.2	11.5	3.1
College:								
1 year	1,241	100.0	7.9	21.9	25.1	29.8	12.3	3.0
2 years	1,659	100.0	8.2	24.4	24.1	27.5	12.5	3.3
3 years	454	100.0	6.8	27.3	22.3	26.3	12.9	4.4
4 years	576	100.0	4.1	19.8	27.7	29.9	14.0	4.5
5 years or more	203	100.0	3.2	21.7	21.6	29.9	17.5	6.0
Education in opticianry:								
Education	989	100.0	9.2	30.9	25.9	24.3	7.7	2.0
No education	9,974	100.0	5.9	17.9	23.3	32.2	15.1	5.6
Training in opticianry:								
On the job	6,778	100.0	7.1	17.6	22.9	30.9	15.4	6.0
Registered apprentice	500	100.0	7.1	21.3	27.2	30.3	11.0	3.1
Other	547	100.0	1.7	7.9	17.7	42.5	22.5	7.8
On the job, registered apprentice	739	100.0	7.0	28.7	27.1	25.7	9.3	2.3
On the job, other	1,483	100.0	3.0	19.5	22.7	36.1	13.9	4.7
Registered apprentice, other	127	100.0	1.9	14.4	28.1	41.1	10.7	3.7
On the job, registered apprentice, other	354	100.0	4.0	20.2	26.5	35.4	10.9	3.0
No training at place of employment	436	100.0	9.6	36.6	29.0	15.6	6.8	2.3

Table 5. Number of active opticians, by number of years in opticianry and geographic location of employment: United States, 1969

Geographic location of employment	All active opticians	Number of years in opticianry					
		1-4	5-9	10-19	20-29	30-39	40 and over
United States	10,963	1,087	1,423	2,407	3,100	1,980	967
Geographic region:							
Northeast	3,178	186	370	600	919	686	416
North Central	2,803	412	402	607	771	422	188
South	3,262	327	441	768	964	540	223
West	1,720	163	210	431	445	332	140
Geographic division:							
New England	786	32	66	140	244	203	101
Middle Atlantic	2,392	154	304	461	676	484	315
East North Central	1,805	255	267	410	501	260	112
West North Central	998	157	135	198	271	162	76
South Atlantic	1,727	133	216	376	549	323	131
East South Central	552	67	97	129	152	77	30
West South Central	983	126	128	263	263	140	62
Mountain	635	80	80	156	164	120	34
Pacific	1,086	82	130	275	281	212	106
State:							
Alabama	163	18	38	29	40	29	9
Alaska	14	2	1	4	5	2	-
Arizona	109	4	3	31	29	33	9
Arkansas	33	7	3	10	12	2	-
California	732	46	85	193	189	147	73
Colorado	256	35	33	66	66	42	13
Connecticut	199	8	21	36	57	56	22
Delaware	48	1	7	7	21	8	3
District of Columbia	138	12	27	30	30	28	12
Florida	434	20	52	101	143	88	29
Georgia	254	50	35	40	73	44	12
Hawaii	55	1	12	10	13	13	4
Idaho	21	2	2	1	9	6	1
Illinois	426	81	46	87	119	65	28
Indiana	212	40	36	48	49	27	12
Iowa	170	28	20	38	44	24	14
Kansas	99	11	16	27	26	16	3
Kentucky	159	21	27	50	35	17	9
Louisiana	152	21	13	42	44	19	13
Maine	10	1	-	3	3	1	2

Table 5. Number of active opticians, by number of years in opticianry and geographic location of employment: United States, 1969–Con.

Geographic location of employment	All active opticians	Number of years in opticianry					
		1-4	5-9	10-19	20-29	30-39	40 and over
State–Con.							
Maryland	316	22	54	61	94	61	24
Massachusetts	473	21	36	85	153	107	71
Michigan	366	33	63	87	104	57	23
Minnesota	283	48	42	53	74	52	14
Mississippi	64	8	7	17	27	3	2
Missouri	277	43	29	46	76	46	38
Montana	53	3	10	16	13	11	-
Nebraska	113	23	15	24	28	17	5
Nevada	23	2	1	5	4	7	4
New Hampshire	30	2	3	4	11	9	1
New Jersey	337	20	46	62	105	67	38
New Mexico	48	7	8	12	12	7	1
New York	1,357	69	167	237	407	289	188
North Carolina	165	6	12	40	69	22	15
North Dakota	20	1	3	6	5	5	-
Ohio	566	83	97	147	131	72	35
Oklahoma	130	13	21	46	36	10	4
Oregon	106	12	10	22	32	17	13
Pennsylvania	698	65	90	162	164	128	89
Rhode Island	66	-	6	9	19	26	6
South Carolina	57	3	8	12	16	12	6
South Dakota	37	3	9	3	17	3	2
Tennessee	167	20	26	33	50	28	10
Texas	667	86	91	165	171	110	45
Utah	118	24	22	24	29	13	6
Vermont	8	-	1	2	1	3	-
Virginia	254	9	18	65	91	44	27
Washington	179	21	23	46	41	33	15
West Virginia	62	9	4	20	12	14	2
Wisconsin	235	18	25	40	98	38	15
Wyoming	8	3	-	1	3	1	-

Table 6. Number and percent distribution of active opticians by number of years in opticianry, according to geographic location of employment: United States, 1969

Geographic location of employment	Number of active opticians	Total	Number of years in opticianry					
			1-4	5-9	10-19	20-29	30-39	40 and over
		Percent distribution						
United States	10,963	100.0	9.9	13.0	22.0	28.3	18.1	8.8
Geographic region:								
Northeast	3,178	100.0	5.9	11.7	18.9	28.9	21.6	13.1
North Central	2,803	100.0	14.7	14.3	21.7	27.5	15.1	6.7
South	3,262	100.0	10.0	13.5	23.5	29.5	16.6	6.8
West	1,720	100.0	9.4	12.2	25.1	25.9	19.3	8.1
Geographic division:								
New England	786	100.0	4.1	8.5	17.8	31.0	25.8	12.9
Middle Atlantic	2,392	100.0	6.4	12.7	19.3	28.2	20.2	13.2
East North Central	1,805	100.0	14.1	14.8	22.7	27.7	14.4	6.2
West North Central	998	100.0	15.7	13.5	19.8	27.1	16.3	7.6
South Atlantic	1,727	100.0	7.7	12.5	21.8	31.8	18.7	7.6
East South Central	552	100.0	12.2	17.6	23.4	27.5	14.0	5.4
West South Central	983	100.0	12.9	13.0	26.7	26.8	14.3	6.3
Mountain	635	100.0	12.6	12.6	24.6	25.9	18.9	5.4
Pacific	1,086	100.0	7.6	12.0	25.3	25.8	19.5	9.7
State:								
Alabama	163	100.0	11.1	23.3	17.8	24.4	17.8	5.6
Alaska	14	100.0	16.7	8.3	25.0	33.3	16.7	-
Arizona	109	100.0	3.9	2.6	28.9	26.3	30.3	7.9
Arkansas	33	100.0	20.0	10.0	30.0	35.0	5.0	-
California	732	100.0	6.2	11.5	26.3	25.9	20.1	9.9
Colorado	256	100.0	13.6	13.0	26.0	26.0	16.2	5.2
Connecticut	199	100.0	4.1	10.4	18.1	28.5	28.0	10.9
Delaware	48	100.0	2.9	14.7	14.7	44.1	17.6	5.9
District of Columbia	138	100.0	8.4	19.3	21.7	21.7	20.5	8.4
Florida	434	100.0	4.6	12.0	23.1	33.0	20.4	6.8
Georgia	254	100.0	19.6	13.6	15.8	28.8	17.4	4.9
Hawaii	55	100.0	2.7	21.6	18.9	24.3	24.3	8.1
Idaho	21	100.0	9.5	9.5	4.8	42.9	28.6	4.8
Illinois	426	100.0	19.1	10.7	20.5	27.9	15.3	6.5
Indiana	212	100.0	18.7	16.8	22.6	23.2	12.9	5.8
Iowa	170	100.0	16.7	11.9	22.6	26.2	14.3	8.3
Kansas	99	100.0	11.1	16.2	27.3	26.3	16.2	3.0
Kentucky	159	100.0	13.2	17.0	31.4	22.0	10.7	5.7
Louisiana	152	100.0	13.8	8.5	27.7	29.2	12.3	8.5
Maine	10	100.0	10.0	-	30.0	30.0	10.0	20.0

Table 6. Number and percent distribution of active opticians by number of years in opticianry, according to geographic location of employment: United States, 1969—Con.

Geographic location of employment	Number of active opticians	Total	Number of years in opticianry					
			1-4	5-9	10-19	20-29	30-39	40 and over
		Percent distribution						
State—Con.								
Maryland	316	100.0	7.1	17.0	19.3	29.7	19.3	7.5
Massachusetts	473	100.0	4.4	7.6	18.0	32.3	22.6	15.0
Michigan	366	100.0	8.9	17.3	23.8	28.3	15.5	6.3
Minnesota	283	100.0	16.8	14.9	18.8	26.2	18.3	5.0
Mississippi	64	100.0	13.2	10.5	26.3	42.1	5.3	2.6
Missouri	277	100.0	15.4	10.4	16.5	27.5	16.5	13.7
Montana	53	100.0	5.4	18.9	29.7	24.3	21.6	-
Nebraska	113	100.0	20.5	13.6	21.6	25.0	14.8	4.5
Nevada	23	100.0	8.7	4.3	21.7	17.4	30.4	17.4
New Hampshire	30	100.0	6.7	10.0	13.3	36.7	30.0	3.3
New Jersey	337	100.0	5.8	13.7	18.3	31.1	19.9	11.2
New Mexico	48	100.0	15.0	17.5	25.0	25.0	15.0	2.5
New York	1,357	100.0	5.1	12.3	17.4	30.0	21.3	13.8
North Carolina	165	100.0	3.7	7.4	24.5	41.7	13.5	9.2
North Dakota	20	100.0	5.0	15.0	30.0	25.0	25.0	-
Ohio	566	100.0	14.7	17.2	26.0	23.1	12.8	6.1
Oklahoma	130	100.0	9.7	16.1	35.5	28.0	7.5	3.2
Oregon	106	100.0	11.1	9.5	20.6	30.2	15.9	12.7
Pennsylvania	698	100.0	9.3	13.0	23.2	23.4	18.3	12.8
Rhode Island	66	100.0	-	8.6	14.3	28.6	40.0	8.6
South Carolina	57	100.0	5.3	14.0	21.1	28.1	21.1	10.5
South Dakota	37	100.0	8.3	25.0	8.3	45.8	8.3	4.2
Tennessee	167	100.0	12.0	15.3	20.0	30.0	16.7	6.0
Texas	667	100.0	12.9	13.6	24.7	25.6	16.5	6.8
Utah	118	100.0	20.3	18.9	20.3	24.3	10.8	5.4
Vermont	8	100.0	-	14.3	28.6	14.3	42.9	-
Virginia	254	100.0	3.7	7.0	25.6	35.8	17.2	10.7
Washington	179	100.0	11.9	12.6	25.9	23.1	18.2	8.4
West Virginia	62	100.0	14.8	6.6	32.8	19.7	23.0	3.3
Wisconsin	235	100.0	7.8	10.9	17.1	41.9	16.3	6.2
Wyoming	8	100.0	37.5	-	12.5	37.5	12.5	-

Table 7. Number of active opticians, by number of years in opticianry and selected characteristics: United States, 1969

Characteristic	All active opticians	Number of years in opticianry					
		1-4	5-9	10-19	20-29	30-39	40 and over
All active opticians	10,963	1,087	1,423	2,407	3,100	1,980	967
Sex:							
Male	9,709	657	1,187	2,109	2,909	1,900	947
Female	1,254	430	236	298	191	80	19
Self-classification of specialties:							
Dispensing optician only	3,849	517	592	932	947	557	304
Dispensing optician and optical mechanic	2,962	164	294	502	922	685	395
Dispensing optician and contact lens technician	894	71	155	248	258	124	38
Dispensing optician, optical mechanic, and contact lens technician	1,289	43	119	277	449	306	96
Dispensing optician and all other specialties	1,337	105	160	300	414	257	101
Nondispensing optician	632	187	105	148	110	50	32
Principal place of employment:							
Retail optical establishment	7,614	659	961	1,697	2,152	1,421	725
Optometrist, ophthalmologist, or other physician	1,021	131	140	217	291	159	83
Ophthalmic goods wholesaler	595	47	43	97	211	145	52
Hospital or clinic	575	54	93	130	178	94	26
Department store optical department	386	91	79	79	70	46	20
Other	772	104	107	187	198	115	62
Weeks per year and hours per week worked:							
Under 48 weeks:							
1-34 hours	183	20	14	32	45	28	44
35 hours and over	179	16	19	27	49	38	31
48 to 52 weeks:							
1-34 hours	623	81	92	132	128	77	114
35-40 hours	4,228	509	585	929	1,094	743	368
41-49 hours	3,796	367	485	832	1,147	701	265
50 hours and over	1,953	95	229	455	636	394	145
Years of schooling:							
High school:							
1 year or less	587	24	18	48	138	134	224
2 years	536	22	24	79	148	131	133
3 years	588	46	57	90	155	156	84
4 years	5,120	573	646	1,116	1,561	927	298
College:							
1 year	1,241	137	184	287	359	204	70
2 years	1,659	174	284	429	441	243	89
3 years	454	53	93	115	92	70	31
4 years	576	46	84	177	154	90	24
5 years or more	203	13	33	67	52	25	14
School of opticianry:							
None	9,974	995	1,191	2,121	2,882	1,848	937
Erie County Technical Institute	331	48	113	111	35	12	12
Ferris State College	29	7	12	5	1	3	1
Los Angeles City College	104	2	24	47	22	5	3
New York City Community College	83	10	28	19	14	11	2
Eveleth Area Vocational-Technical School	4	4	-	-	-	-	-
Military schools of opticianry	438	21	55	104	145	101	11
Training in opticianry:							
On the job	6,778	805	850	1,394	1,855	1,221	653
Registered apprentice	500	46	57	137	150	84	26
Other	547	24	33	93	152	163	82
On the job, registered apprentice	739	72	125	193	244	70	35
On the job, other	1,483	75	201	323	438	320	126
Registered apprentice, other	127	2	11	25	57	23	9
On the job, registered apprentice, other	354	16	30	103	126	62	17
No training at place of employment	436	47	117	140	77	37	19

Table 8. Number and percent distribution of active opticians by number of years in opticianry, according to selected characteristics: United States, 1969

Characteristics	Number of active opticians	Total	Number of years in opticianry					
			1-4	5-9	10-19	20-29	30-39	40 and over
		Percent distribution						
All active opticians	10,963	100.0	9.9	13.0	22.0	28.3	18.1	8.8
Sex:								
Male	9,709	100.0	6.8	12.2	21.7	30.0	19.6	9.8
Female	1,254	100.0	34.3	18.8	23.7	15.2	6.4	1.5
Self-classification of specialties:								
Dispensing optician only	3,849	100.0	13.4	15.4	24.2	24.6	14.5	7.9
Dispensing optician and optical mechanic	2,962	100.0	5.5	9.9	17.0	31.1	23.1	13.3
Dispensing optician and contact lens technician	894	100.0	8.0	17.3	27.7	28.9	13.9	4.3
Dispensing optician, optical mechanic, and contact lens technician	1,289	100.0	3.3	9.2	21.5	34.8	23.7	7.4
Dispensing optician and all other specialties	1,337	100.0	7.8	11.9	22.5	31.0	19.2	7.6
Nondispensing optician	632	100.0	29.7	16.5	23.4	17.4	7.9	5.1
Principal place of employment:								
Retail optical establishment	7,614	100.0	8.7	12.6	22.3	28.3	18.7	9.5
Optometrist, ophthalmologist, or other physician	1,021	100.0	12.9	13.7	21.2	28.5	15.6	8.1
Ophthalmic goods wholesaler	595	100.0	7.9	7.2	16.3	35.5	24.4	8.7
Hospital or clinic	575	100.0	9.4	16.1	22.6	30.9	16.4	4.5
Department store optical department	386	100.0	23.6	20.5	20.6	18.2	12.1	5.1
Other	772	100.0	13.5	13.9	24.2	25.7	14.8	8.0
Weeks per year and hours per week worked:								
Under 48 weeks:								
1-34 hours	183	100.0	10.8	7.4	17.7	24.8	15.4	24.0
35 hours and over	179	100.0	9.2	10.4	14.9	27.1	21.3	17.2
48 to 52 weeks:								
1-34 hours	623	100.0	13.0	14.8	21.1	20.6	12.3	18.3
35-40 hours	4,228	100.0	12.0	13.8	22.0	25.9	17.6	8.7
41-49 hours	3,796	100.0	9.7	12.8	21.9	30.2	18.5	7.0
50 hours and over	1,953	100.0	4.8	11.7	23.3	32.6	20.2	7.4
Years of schooling:								
High school:								
1 year or less	587	100.0	4.1	3.1	8.2	23.5	22.8	38.2
2 years	536	100.0	4.1	4.4	14.7	27.5	24.4	24.9
3 years	588	100.0	7.8	9.6	15.4	26.4	26.6	14.2
4 years	5,120	100.0	11.2	12.6	21.8	30.5	18.1	5.8
College:								
1 year	1,241	100.0	11.0	14.8	23.1	28.9	16.5	5.6
2 years	1,659	100.0	10.5	17.1	25.8	26.6	14.6	5.4
3 years	454	100.0	11.6	20.5	25.3	20.4	15.5	6.8
4 years	576	100.0	8.0	14.6	30.7	26.8	15.6	4.2
5 years or more	203	100.0	6.4	16.3	32.9	25.5	12.2	6.7
School of opticianry:								
None	9,974	100.0	10.0	11.9	21.3	28.9	18.5	9.4
Erie County Technical Institute	331	100.0	14.6	34.1	33.6	10.5	3.7	3.5
Ferris State College	29	100.0	22.7	42.8	17.9	4.3	8.7	3.5
Los Angeles City College	104	100.0	1.6	23.4	45.2	21.5	5.0	3.3
New York City Community College	83	100.0	11.9	33.0	22.4	16.8	13.0	2.8
Eveleth Area Vocational-Technical School	4	100.0	100.0	-	-	-	-	-
Military schools of opticianry	438	100.0	4.9	12.5	23.8	33.1	23.2	2.6
Training in opticianry:								
On the job	6,778	100.0	11.9	12.5	20.6	27.4	18.0	9.6
Registered apprentice	500	100.0	9.1	11.4	27.4	30.0	16.9	5.1
Other	547	100.0	4.4	6.1	16.9	27.8	29.8	14.9
On the job, registered apprentice	739	100.0	9.7	16.9	26.1	33.0	9.5	4.7
On the job, other	1,483	100.0	5.0	13.5	21.7	29.6	21.6	8.5
Registered apprentice, other	127	100.0	1.8	8.4	19.8	44.8	18.0	7.2
On the job, registered apprentice, other	354	100.0	4.6	8.4	29.0	35.7	17.5	4.8
No training at place of employment	436	100.0	10.8	26.7	32.1	17.6	8.4	4.3

Table 9. Number of active opticians, by number of years in opticianry and percentage of hours per week spent in specific activities related to employment: United States, 1969

Percentage of hours per week spent in specific activities related to employment	All active opticians	Number of years in opticianry					
		1-4	5-9	10-19	20-29	30-39	40 and over
All active opticians	10,963	1,087	1,423	2,407	3,100	1,980	967
Shopwork:							
None	3,135	413	377	673	804	540	328
1-9 percent	899	68	136	205	246	175	69
10-39 percent	4,161	341	573	913	1,257	755	321
40-59 percent	1,692	129	230	367	496	327	142
60-99 percent	798	88	89	190	216	140	75
100 percent	278	47	17	59	81	43	31
Fitting and adjusting eyeglasses:							
None	1,003	151	125	219	245	171	92
1-9 percent	203	4	27	44	63	47	19
10-39 percent	1,699	172	226	393	463	308	138
40-59 percent	2,700	260	362	593	796	481	209
60-99 percent	4,318	410	589	929	1,262	784	344
100 percent	1,040	91	95	229	271	190	165
Fitting and adjusting contact lenses:							
None	8,025	803	1,004	1,667	2,245	1,498	808
1-9 percent	546	81	70	129	148	94	24
10-39 percent	1,666	126	224	400	526	291	98
40-59 percent	300	34	45	89	83	36	13
60-99 percent	338	32	63	95	79	52	17
100 percent	89	11	17	27	19	9	7
Administrative activities:							
None	6,210	461	704	1,296	1,855	1,213	681
1-9 percent	1,352	123	214	329	421	209	54
10-39 percent	3,006	379	452	712	748	509	206
40-59 percent	265	100	36	43	49	23	14
60-99 percent	112	24	16	24	16	21	10
100 percent	19	-	-	2	9	5	2
Opticianry research:							
None	7,891	909	1,062	1,745	2,144	1,315	716
1-9 percent	881	70	115	203	290	159	43
10-39 percent	1,735	92	201	396	521	367	157
40-59 percent	243	12	19	40	71	72	28
60-99 percent	163	2	21	20	56	46	18
100 percent	50	2	4	2	17	20	6
Teaching opticianry:							
None	10,119	1,000	1,283	2,200	2,870	1,849	917
1-9 percent	589	60	96	142	164	95	32
10-39 percent	246	27	45	60	62	35	16
40-59 percent	6	-	-	5	-	-	1
60-99 percent	2	-	-	-	2	-	-
100 percent	2	-	-	-	2	-	-
Clerical activities:							
None	10,804	1,076	1,407	2,370	3,052	1,944	954
1-9 percent	82	9	9	20	25	17	4
10-39 percent	66	2	6	16	18	15	9
40-59 percent	3	-	2	-	-	1	-
60-99 percent	6	-	-	1	2	3	-
100 percent	2	-	-	-	2	-	-
Other types of activities:							
None	10,274	1,025	1,320	2,264	2,889	1,856	921
1-9 percent	178	14	23	33	69	30	9
10-39 percent	338	28	59	66	98	63	24
40-59 percent	68	7	6	18	18	17	2
60-99 percent	68	6	9	21	17	9	7
100 percent	37	7	7	5	8	6	4

Table 10. Number and percent distribution of active opticians by numbers of years in opticianry, according to percentage of hours per week spent in specific activities related to employment: United States, 1969

Percentage of hours per week spent in specific activities related to employment	Number of active opticians	Total	Number of years in opticianry					
			1-4	5-9	10-19	20-29	30-39	40 and over
		Percent distribution						
All active opticians	10,963	100.0	9.9	13.0	22.0	28.3	18.1	8.8
Shopwork:								
None	3,135	100.0	13.2	12.0	21.5	25.6	17.2	10.5
1-9 percent	899	100.0	7.6	15.2	22.8	27.3	19.4	7.7
10-39 percent	4,161	100.0	8.2	13.8	21.9	30.2	18.1	7.7
40-59 percent	1,692	100.0	7.7	13.6	21.7	29.3	19.3	8.4
60-99 percent	798	100.0	11.1	11.2	23.8	27.1	17.5	9.4
100 percent	278	100.0	16.8	6.1	21.3	29.2	15.6	11.0
Fitting and adjusting eyeglasses:								
None	1,003	100.0	15.1	12.5	21.8	24.4	17.0	9.2
1-9 percent	203	100.0	1.7	13.1	21.8	31.0	23.1	9.2
10-39 percent	1,699	100.0	10.1	13.3	23.1	27.3	18.1	8.1
40-59 percent	2,700	100.0	9.6	13.4	22.0	29.5	17.8	7.8
60-99 percent	4,318	100.0	9.5	13.6	21.5	29.2	18.2	8.0
100 percent	1,040	100.0	8.7	9.1	22.0	26.0	18.3	15.9
Fitting and adjusting contact lenses:								
None	8,025	100.0	10.0	12.5	20.8	28.0	18.7	10.1
1-9 percent	546	100.0	14.8	12.9	23.5	27.1	17.3	4.4
10-39 percent	1,665	100.0	7.6	13.4	24.0	31.6	17.5	5.9
40-59 percent	300	100.0	11.3	15.0	29.7	27.6	12.1	4.2
60-99 percent	338	100.0	9.6	18.7	28.2	23.3	15.3	4.9
100 percent	89	100.0	12.3	19.0	30.0	20.8	9.8	8.0
Administrative activities:								
None	6,210	100.0	7.4	11.3	20.9	29.9	19.5	11.0
1-9 percent	1,352	100.0	9.1	15.9	24.3	31.2	15.5	4.0
10-39 percent	3,006	100.0	12.6	15.0	23.7	24.9	16.9	6.8
40-59 percent	265	100.0	37.6	13.6	16.4	18.6	8.7	5.2
60-99 percent	112	100.0	21.4	14.5	21.5	14.6	19.1	8.9
100 percent	19	100.0	-	-	11.5	49.6	26.8	12.2
Opticianry research:								
None	7,891	100.0	11.5	13.5	22.1	27.2	16.7	9.1
1-9 percent	881	100.0	7.9	13.1	23.0	32.9	18.1	4.9
10-39 percent	1,735	100.0	5.3	11.6	22.8	30.0	21.2	9.0
40-59 percent	243	100.0	5.0	7.8	16.6	29.4	29.8	11.4
60-99 percent	163	100.0	1.5	12.9	12.3	34.1	28.3	10.9
100 percent	50	100.0	3.0	8.0	4.9	33.3	39.2	11.6
Teaching opticianry:								
None	10,119	100.0	9.9	12.7	21.7	28.4	18.3	9.1
1-9 percent	589	100.0	10.2	16.2	24.1	27.8	16.2	5.5
10-39 percent	246	100.0	11.0	18.2	24.6	25.3	14.4	6.5
40-59 percent	6	100.0	-	-	82.3	-	-	17.7
60-99 percent	2	100.0	-	-	-	100.0	-	-
100 percent	2	100.0	-	-	-	100.0	-	-
Clerical activities:								
None	10,804	100.0	10.0	13.0	21.9	28.2	18.0	8.8
1-9 percent	82	100.0	10.7	10.5	23.8	30.5	20.2	4.3
10-39 percent	66	100.0	3.1	8.7	24.2	27.9	22.7	13.5
40-59 percent	3	100.0	-	60.2	-	-	39.8	-
60-99 percent	6	100.0	-	-	15.5	37.3	47.2	-
100 percent	2	100.0	-	-	-	100.0	-	-
Other types of activities:								
None	10,274	100.0	10.0	12.8	22.0	28.1	18.1	9.0
1-9 percent	178	100.0	8.1	13.1	18.3	38.9	16.7	4.9
10-39 percent	338	100.0	8.4	17.4	19.5	29.0	18.5	7.1
40-59 percent	68	100.0	10.8	8.6	25.9	26.8	24.4	3.4
60-99 percent	68	100.0	7.7	12.6	31.4	24.3	13.8	10.2
100 percent	37	100.0	19.5	18.1	14.7	21.4	15.6	10.8

Table 11. Number of active opticians, by principal place of employment and geographic location of employment: United States, 1969

Geographic location of employment	All active opticians	Principal place of employment					
		Retail optical establishment	Optometrist, ophthalmologist, or other physician	Ophthalmic goods wholesaler	Hospital or clinic	Department store optical department	Other
United States	10,963	7,614	1,021	595	575	386	772
Geographic region:							
Northeast	3,178	2,375	270	184	35	84	230
North Central	2,803	1,691	329	203	205	170	205
South	3,262	2,374	317	128	162	101	179
West	1,720	1,174	105	81	172	30	158
Geographic division:							
New England	786	554	72	48	8	27	77
Middle Atlantic	2,392	1,821	198	136	27	57	153
East North Central	1,805	1,035	236	149	143	112	130
West North Central	998	656	93	54	62	57	75
South Atlantic	1,727	1,318	124	61	68	56	101
East South Central	552	401	38	36	31	26	21
West South Central	983	656	155	31	63	20	57
Mountain	635	432	47	32	41	12	71
Pacific	1,086	742	58	49	131	19	87
State:							
Alabama	163	101	20	18	7	9	7
Alaska	14	12	-	-	2	-	-
Arizona	109	82	4	4	-	-	19
Arkansas	33	15	3	2	7	-	7
California	732	522	39	27	69	10	64
Colorado	256	149	25	15	22	10	35
Connecticut	199	168	9	6	-	4	11
Delaware	48	37	1	-	-	3	7
District of Columbia	138	106	13	-	10	5	3
Florida	434	356	31	11	13	7	16
Georgia	254	175	30	7	8	6	28
Hawaii	55	45	-	3	-	6	1
Idaho	21	13	2	2	4	-	-
Illinois	426	249	61	40	24	16	36
Indiana	212	133	27	18	10	11	14
Iowa	170	111	26	4	12	6	10
Kansas	99	67	10	13	3	2	4
Kentucky	159	133	8	4	-	7	7
Louisiana	152	104	21	2	11	8	6
Maine	10	6	1	-	-	-	3

Table 11. Number of active opticians, by principal place of employment and geographic location of employment: United States, 1969—Con.

Geographic location of employment	All active opticians	Principal place of employment					
		Retail optical establishment	Optometrist, ophthalmologist, or other physician	Ophthalmic goods wholesaler	Hospital or clinic	Department store optical department	Other
State—Con.							
Maryland	316	258	16	4	4	21	12
Massachusetts	473	311	51	32	5	18	56
Michigan	366	171	52	45	33	25	40
Minnesota	283	197	14	11	22	17	21
Mississippi	64	42	-	2	15	5	-
Missouri	277	187	24	11	11	20	24
Montana	53	27	1	3	10	-	11
Nebraska	113	61	14	6	5	13	13
Nevada	23	20	1	-	-	-	2
New Hampshire	30	15	5	2	3	-	5
New Jersey	337	301	8	11	1	1	14
New Mexico	48	47	1	-	-	-	-
New York	1,357	995	147	66	20	39	90
North Carolina	165	108	7	24	17	1	7
North Dakota	20	11	1	4	4	-	-
Ohio	566	386	64	14	21	51	29
Oklahoma	130	101	4	4	13	4	4
Oregon	106	54	10	5	27	-	10
Pennsylvania	698	525	43	59	5	17	49
Rhode Island	66	47	6	8	-	4	2
South Carolina	57	33	7	9	5	-	3
South Dakota	37	22	3	5	5	-	3
Tennessee	167	124	10	12	9	4	7
Texas	667	436	127	23	33	8	41
Utah	118	94	10	8	2	2	3
Vermont	8	7	-	-	-	1	-
Virginia	254	191	15	6	6	12	24
Washington	179	110	9	14	33	3	11
West Virginia	62	53	2	-	4	2	1
Wisconsin	235	95	31	33	56	9	11
Wyoming	8	-	3	-	4	-	1

Table 12. Number and percent distribution of active opticians by principal place of employment, according to geographic location of employment: United States, 1969

Geographic location of employment	Number of active opticians	Total	Principal place of employment: Retail optical establishment	Optometrist, ophthalmologist, or other physician	Ophthalmic goods wholesaler	Hospital or clinic	Department store optical department	Other
		Percent distribution						
United States	10,963	100.0	69.5	9.3	5.4	5.2	3.5	7.0
Geographic region:								
Northeast	3,178	100.0	74.7	8.5	5.8	1.1	2.7	7.2
North Central	2,803	100.0	60.3	11.7	7.2	7.3	6.1	7.3
South	3,262	100.0	72.8	9.7	3.9	5.0	3.1	5.5
West	1,720	100.0	68.2	6.1	4.7	10.0	1.8	9.2
Geographic division:								
New England	786	100.0	70.5	9.2	6.1	1.0	3.4	9.8
Middle Atlantic	2,392	100.0	76.1	8.3	5.7	1.1	2.4	6.4
East North Central	1,805	100.0	57.3	13.1	8.2	7.9	6.2	7.2
West North Central	998	100.0	65.8	9.3	5.4	6.2	5.8	7.5
South Atlantic	1,727	100.0	76.3	7.2	3.5	4.0	3.2	5.8
East South Central	552	100.0	72.6	6.9	6.5	5.7	4.6	3.8
West South Central	983	100.0	66.8	15.8	3.1	6.4	2.0	5.8
Mountain	635	100.0	68.0	7.5	5.0	6.5	1.8	11.2
Pacific	1,086	100.0	68.4	5.3	4.5	12.1	1.7	8.0
State:								
Alabama	163	100.0	62.2	12.2	11.1	4.4	5.6	4.4
Alaska	14	100.0	83.3	-	-	16.7	-	-
Arizona	109	100.0	75.0	3.9	3.9	-	-	17.1
Arkansas	33	100.0	45.0	10.0	5.0	20.0	-	20.0
California	732	100.0	71.4	5.3	3.7	9.5	1.4	8.8
Colorado	256	100.0	58.4	9.7	5.8	8.4	3.9	13.6
Connecticut	199	100.0	84.5	4.7	3.1	-	2.1	5.7
Delaware	48	100.0	76.5	2.9	-	-	5.9	14.7
District of Columbia	138	100.0	77.1	9.6	-	7.2	3.6	2.4
Florida	434	100.0	82.1	7.1	2.5	3.1	1.5	3.7
Georgia	254	100.0	69.0	12.0	2.7	3.3	2.2	10.9
Hawaii	55	100.0	81.1	-	5.4	-	10.8	2.7
Idaho	21	100.0	61.9	9.5	9.5	19.0	-	-
Illinois	426	100.0	58.6	14.4	9.3	5.6	3.7	8.4
Indiana	212	100.0	62.6	12.9	8.4	4.5	5.2	6.5
Iowa	170	100.0	65.5	15.5	2.4	7.1	3.6	6.0
Kansas	99	100.0	67.7	10.1	13.1	3.0	2.0	4.0
Kentucky	159	100.0	83.6	5.0	2.5	-	4.4	4.4
Louisiana	152	100.0	68.5	13.8	1.5	6.9	5.4	3.8
Maine	10	100.0	60.0	10.0	-	-	-	30.0

Table 12. Number and percent distribution of active opticians by principal place of employment, according to geographic location of employment: United States, 1969—Con.

Geographic location of employment	Number of active opticians	Total	Principal place of employment					
			Retail optical establishment	Optometrist, ophthalmologist, or other physician	Ophthalmic goods wholesaler	Hospital or clinic	Department store optical department	Other
		Percent distribution						
State—Con.								
Maryland	316	100.0	81.6	5.2	1.4	1.4	6.6	3.8
Massachusetts	473	100.0	65.8	10.8	6.8	1.1	3.8	11.8
Michigan	366	100.0	46.7	14.3	12.2	8.9	6.8	11.0
Minnesota	283	100.0	69.8	5.0	4.0	7.9	5.9	7.4
Mississippi	64	100.0	65.8	-	2.6	23.7	7.9	-
Missouri	277	100.0	67.6	8.8	3.8	3.8	7.1	8.8
Montana	53	100.0	51.4	2.7	5.4	18.9	-	21.6
Nebraska	113	100.0	54.5	12.5	5.7	4.5	11.4	11.4
Nevada	23	100.0	87.0	4.3	-	-	-	8.7
New Hampshire	30	100.0	50.0	16.7	6.7	10.0	-	16.7
New Jersey	337	100.0	89.2	2.5	3.3	0.4	0.4	4.1
New Mexico	48	100.0	97.5	2.5	-	-	-	-
New York	1,357	100.0	73.3	10.8	4.9	1.5	2.9	6.6
North Carolina	165	100.0	65.6	4.3	14.7	10.4	0.6	4.3
North Dakota	20	100.0	55.0	5.0	20.0	20.0	-	-
Ohio	566	100.0	68.3	11.3	2.5	3.7	9.1	5.2
Oklahoma	130	100.0	77.4	3.2	3.2	9.7	3.2	3.2
Oregon	106	100.0	50.8	9.5	4.8	25.4	-	9.5
Pennsylvania	698	100.0	75.2	6.1	8.4	0.8	2.5	7.0
Rhode Island	66	100.0	71.4	8.6	11.4	-	5.7	2.9
South Carolina	57	100.0	57.9	12.3	15.8	8.8	-	5.3
South Dakota	37	100.0	58.3	8.3	12.5	12.5	-	8.3
Tennessee	167	100.0	74.7	6.0	7.3	5.3	2.7	4.0
Texas	667	100.0	65.4	19.0	3.4	5.0	1.1	6.1
Utah	118	100.0	79.7	8.1	6.8	1.4	1.4	2.7
Vermont	8	100.0	85.7	-	-	-	14.3	-
Virginia	254	100.0	75.3	6.0	2.3	2.3	4.7	9.3
Washington	179	100.0	61.5	4.9	7.7	18.2	1.4	6.3
West Virginia	62	100.0	85.2	3.3	-	6.6	3.3	1.6
Wisconsin	235	100.0	40.3	13.2	14.0	24.0	3.9	4.7
Wyoming	8	100.0	-	37.5	-	50.0	-	12.5

Table 13. Number of active opticians, by principal place of employment and selected characteristics: United States, 1969

Characteristic	All active opticians	Principal place of employment					
		Retail optical establishment	Optometrist, ophthalmologist, or other physician	Ophthalmic goods wholesaler	Hospital or clinic	Department store optical department	Other
All active opticians	10,963	7,614	1,021	595	575	386	772
Sex:							
Male	9,709	6,890	808	561	508	303	639
Female	1,254	724	212	35	67	82	133
Years of Schooling:							
High school:							
1 year or less	587	397	51	54	25	17	43
2 years	536	389	34	42	31	15	25
3 years	588	424	60	28	24	21	32
4 years	5,120	3,481	487	287	270	212	382
College:							
1 year	1,241	860	136	58	75	37	75
2 years	1,659	1,182	141	67	101	51	117
3 years	454	339	27	12	22	17	37
4 years	576	414	49	44	22	9	38
5 years or more	203	128	36	4	6	5	24
Training in opticianry:							
On the job	6,778	4,625	659	410	342	262	480
Registered apprentice	500	383	44	18	26	9	20
Other	547	387	41	27	19	18	55
On the job, registered apprentice	739	558	59	25	34	17	46
On the job, other	1,483	1,010	153	79	82	56	104
Registered apprentice, other	127	92	9	3	10	2	9
On the job, registered apprentice, other	354	243	27	11	39	12	23
No training at place of employment	436	316	28	22	22	10	37
Self-classification of specialties:							
Dispensing optician only	3,849	2,841	338	73	180	164	253
Dispensing optician and optical mechanic	2,962	2,083	240	234	127	119	160
Dispensing optician and contact lens technician	894	632	101	15	65	17	64
Dispensing optician, optical mechanic, and contact lens technician	1,289	944	135	42	77	29	62
Dispensing optician and all other specialties	1,337	822	142	111	87	39	136
Nondispensing optician	632	291	65	121	39	18	98
Number of years in opticianry:							
1-4 years	1,087	659	131	47	54	91	104
5-9 years	1,423	961	140	43	93	79	107
10-19 years	2,407	1,697	217	97	130	79	187
20-29 years	3,100	2,152	291	211	178	70	198
30-39 years	1,980	1,421	159	145	94	46	115
40 years and over	967	725	83	52	26	20	62
School of opticianry attended:							
None	9,974	6,917	938	554	512	359	693
Erie County Technical Institute	331	251	27	12	5	11	25
Ferris State College	29	19	3	1	3	-	2
Los Angeles City College	104	62	4	-	24	2	11
New York City Community College	83	63	7	4	2	5	2
Eveleth Area Vocational-Technical School	4	3	-	-	-	-	1
Military schools of opticianry	438	299	41	24	28	9	37

Table 14. Number and percent distribution of active opticians by principal place of employment, according to sex, age, years of schooling, and training in opticianry: United States, 1969

Sex, age, years of schooling, and training in opticianry	Number of active opticians	Total	Principal place of employment: Retail optical establishment	Optometrist, ophthalmologist, or other physician	Ophthalmic goods wholesaler	Hospital or clinic	Department store optical department	Other
		Percent distribution						
All active opticians . .	10,963	100.0	69.5	9.3	5.4	5.2	3.5	7.0
Sex:								
Male	9,709	100.0	71.0	8.3	5.8	5.2	3.1	6.6
Female	1,254	100.0	57.8	16.9	2.8	5.3	6.6	10.6
Age:								
Under 25 years	683	100.0	63.2	10.3	3.6	5.6	7.5	9.8
25-34 years	2,093	100.0	68.5	9.8	4.1	5.9	4.7	7.0
35-44 years	2,579	100.0	68.2	9.2	6.1	5.7	3.5	7.3
45-54 years	3,449	100.0	69.6	9.3	6.2	5.2	2.6	7.0
55-64 years	1,582	100.0	73.4	8.0	5.8	4.8	2.6	5.4
65 years and over	578	100.0	73.9	10.1	3.6	2.5	2.4	7.6
Years of schooling:								
High school:								
1 year or less	587	100.0	67.5	8.7	9.1	4.3	3.0	7.4
2 years	536	100.0	72.5	6.3	7.9	5.7	2.9	4.7
3 years	588	100.0	72.2	10.2	4.7	4.0	3.6	5.4
4 years	5,120	100.0	68.0	9.5	5.6	5.3	4.1	7.5
College:								
1 year	1,241	100.0	69.3	11.0	4.7	6.0	3.0	6.0
2 years	1,659	100.0	71.3	8.5	4.0	6.1	3.1	7.0
3 years	454	100.0	74.7	6.0	2.5	4.8	3.8	8.2
4 years	576	100.0	71.9	8.4	7.6	3.9	1.6	6.5
5 years or more	203	100.0	63.1	17.5	2.2	3.0	2.5	11.7
Training in opticianry:								
On the job	6,778	100.0	68.2	9.7	6.0	5.1	3.9	7.1
Registered apprentice	500	100.0	76.7	8.7	3.6	5.2	1.8	3.9
Other	547	100.0	70.8	7.6	5.0	3.5	3.2	10.0
On the job, registered apprentice	739	100.0	75.5	8.0	3.4	4.6	2.3	6.2
On the job, other	1,483	100.0	68.1	10.3	5.3	5.5	3.7	7.0
Registered apprentice, other	127	100.0	72.8	7.3	2.7	8.1	1.9	7.2
On the job, registered apprentice, other	354	100.0	68.6	7.5	3.0	11.1	3.4	6.4
No training at place of employment	436	100.0	72.5	6.5	5.1	5.1	2.3	8.5

Table 15. Number and percent distribution of active opticians by principal place of employment, according to selected characteristics: United States, 1969

Characteristic	Number of active opticians	Total	Principal place of employment: Retail optical establishment	Optometrist, ophthalmologist, or other physician	Ophthalmic goods wholesaler	Hospital or clinic	Department store optical department	Other
		Percent distribution						
All active opticians	10,963	100.0	69.5	9.3	5.4	5.2	3.5	7.0
Self-classification of specialties:								
Dispensing optician only	3,849	100.0	73.8	8.8	1.9	4.7	4.3	6.6
Dispensing optician and optical mechanic	2,962	100.0	70.3	8.1	7.9	4.3	4.0	5.4
Dispensing optician and contact lens technician	894	100.0	70.7	11.3	1.7	7.3	1.9	7.1
Dispensing optician, optical mechanic, and contact lens technician	1,289	100.0	73.2	10.5	3.3	6.0	2.2	4.8
Dispensing optician and all other specialties	1,337	100.0	61.5	10.6	8.3	6.5	2.9	10.1
Nondispensing optician	632	100.0	46.1	10.3	19.1	6.1	2.8	15.5
Number of years in opticianry:								
1-4 years	1,087	100.0	60.6	12.1	4.3	5.0	8.4	9.6
5-9 years	1,423	100.0	67.5	9.9	3.0	6.5	5.5	7.5
10-19 years	2,407	100.0	70.5	9.0	4.0	5.4	3.3	7.8
20-29 years	3,100	100.0	69.4	9.4	6.8	5.7	2.3	6.4
30-39 years	1,980	100.0	71.7	8.0	7.3	4.8	2.3	5.8
40 years and over	967	100.0	75.1	8.5	5.4	2.7	2.0	6.4
Weeks per year and hours per week worked:								
Under 48 weeks:								
1-34 hours	183	100.0	66.8	13.9	3.6	4.3	2.3	9.0
35 hours and over	179	100.0	71.0	6.5	5.6	4.9	1.7	10.3
48 to 52 weeks:								
1-34 hours	623	100.0	55.0	17.9	4.3	3.7	5.4	13.7
35-40 hours	4,228	100.0	64.6	10.6	5.5	7.1	4.9	7.4
41-49 hours	3,796	100.0	73.9	8.7	4.3	4.5	2.3	6.3
50 hours and over	1,953	100.0	76.1	4.9	8.1	3.1	2.6	5.2
School of opticianry attended:								
None	9,974	100.0	69.4	9.4	5.6	5.1	3.6	6.9
Erie County Technical Institute	331	100.0	75.8	8.1	3.6	1.6	3.2	7.6
Ferris State College	29	100.0	65.1	11.4	4.6	11.4	-	7.6
Los Angeles City College	104	100.0	60.2	4.3	-	22.8	1.6	11.1
New York City Community College	83	100.0	75.5	8.6	4.9	2.4	6.1	2.4
Eveleth Area Vocational-Technical School	4	100.0	75.6	-	-	-	-	24.4
Military schools of opticianry	438	100.0	68.2	9.4	5.4	6.5	2.0	8.5

Table 16. Number of active opticians, by principal place of employment and percentage of hours per week spent in specific activities related to employment: United States, 1969

Percentage of hours per week spent in specific activities related to employment	All active opticians	Principal place of employment: Retail optical establishment	Optometrist, ophthalmologist, or other physician	Ophthalmic goods wholesaler	Hospital or clinic	Department store optical department	Other
All active opticians	10,963	7,614	1,021	595	575	386	772
Shopwork:							
None	3,135	2,063	310	117	208	141	295
1-9 percent	899	647	65	29	51	37	70
10-39 percent	4,161	3,060	350	130	232	123	266
40-59 percent	1,692	1,296	165	56	58	59	57
60-99 percent	798	436	113	158	21	23	48
100 percent	278	114	17	104	4	3	36
Fitting and adjusting eyeglasses:							
None	1,003	455	62	272	49	11	154
1-9 percent	203	75	24	66	6	5	28
10-39 percent	1,699	1,154	190	179	69	33	75
40-59 percent	2,700	2,017	277	39	120	115	132
60-99 percent	4,318	3,178	383	23	273	163	297
100 percent	1,040	735	85	16	59	59	87
Fitting and adjusting contact lenses:							
None	8,025	5,617	645	537	356	323	548
1-9 percent	546	365	81	18	24	20	38
10-39 percent	1,665	1,151	229	26	118	35	105
40-59 percent	300	211	30	6	30	3	21
60-99 percent	338	220	24	9	41	4	41
100 percent	89	50	12	-	7	1	19
Administrative activities:							
None	6,210	4,233	580	374	375	200	448
1-9 percent	1,352	993	132	39	56	47	85
10-39 percent	3,006	2,172	252	127	126	125	205
40-59 percent	265	149	39	28	13	10	26
60-99 percent	112	57	18	22	6	3	7
100 percent	19	11	-	6	-	-	1
Opticianry research:							
None	7,891	5,426	812	340	443	299	571
1-9 percent	881	675	62	23	42	26	53
10-39 percent	1,735	1,262	134	106	75	48	110
40-59 percent	243	145	10	52	11	8	17
60-99 percent	163	89	3	49	4	4	14
100 percent	50	18	-	25	-	1	7
Teaching opticianry:							
None	10,119	6,988	970	563	531	363	703
1-9 percent	589	430	35	18	35	20	41
10-39 percent	246	186	15	14	9	2	21
40-59 percent	6	3	-	-	-	-	3
60-99 percent	2	-	-	-	-	-	2
100 percent	2	-	-	-	-	-	2
Clerical activities:							
None	10,804	7,520	1,010	583	555	386	750
1-9 percent	82	61	2	3	11	-	5
10-39 percent	66	33	7	9	7	-	9
40-59 percent	3	-	2	-	-	-	1
60-99 percent	6	1	-	-	1	-	4
100 percent	2	-	-	-	-	-	2
Other types of activities:							
None	10,274	7,221	960	511	531	367	693
1-9 percent	178	134	13	2	9	5	16
10-39 percent	338	200	38	36	24	6	33
40-59 percent	68	31	12	11	5	1	8
60-99 percent	68	20	7	19	4	5	14
100 percent	37	8	-	16	3	1	8

Table 17. Number and percent distribution of active opticians by principal place of employment, according to percentage of hours per week spent in specific activities related to employment: United States, 1969

Percentage of hours per week spent in specific activities related to employment	Number of active opticians	Total	Principal place of employment: Retail optical establishment	Optometrist, ophthalmologist, or other physician	Ophthalmic goods wholesaler	Hospital or clinic	Department store optical department	Other
		Percent distribution						
All active opticians	10,963	100.0	69.5	9.3	5.4	5.2	3.5	7.0
Shopwork:								
None	3,135	100.0	65.8	9.9	3.7	6.6	4.5	9.4
1-9 percent	899	100.0	71.9	7.2	3.3	5.7	4.1	7.8
10-39 percent	4,161	100.0	73.5	8.4	3.1	5.6	3.0	6.4
40-59 percent	1,692	100.0	76.6	9.8	3.3	3.4	3.5	3.4
60-99 percent	798	100.0	54.6	14.1	19.8	2.6	2.9	6.0
100 percent	278	100.0	40.8	6.2	37.5	1.5	1.0	13.0
Fitting and adjusting eyeglasses:								
None	1,003	100.0	45.4	6.2	27.1	4.8	1.1	15.3
1-9 percent	203	100.0	37.1	11.6	32.4	2.8	2.3	13.7
10-39 percent	1,699	100.0	67.9	11.2	10.5	4.0	1.9	4.4
40-59 percent	2,700	100.0	74.7	10.3	1.4	4.4	4.3	4.9
60-99 percent	4,318	100.0	73.6	8.9	0.5	6.3	3.8	6.9
100 percent	1,040	100.0	70.6	8.2	1.5	5.7	5.7	8.4
Fitting and adjusting contact lenses:								
None	8,025	100.0	70.0	8.0	6.7	4.4	4.0	6.8
1-9 percent	546	100.0	66.9	14.8	3.4	4.4	3.6	6.9
10-39 percent	1,665	100.0	69.1	13.8	1.5	7.1	2.1	6.3
40-59 percent	300	100.0	70.3	9.9	1.9	9.9	0.9	7.1
60-99 percent	338	100.0	65.1	7.1	2.6	12.0	1.1	12.1
100 percent	89	100.0	56.1	13.5	-	7.6	1.3	21.5
Administrative activites:								
None	6,210	100.0	68.2	9.3	6.0	6.0	3.2	7.2
1-9 percent	1,352	100.0	73.5	9.8	2.9	4.2	3.5	6.3
10-39 percent	3,006	100.0	72.2	8.4	4.2	4.2	4.2	6.8
40-59 percent	265	100.0	56.4	14.8	10.4	4.7	3.9	9.8
60-99 percent	112	100.0	50.5	15.6	20.0	4.9	2.8	6.2
100 percent	19	100.0	59.0	-	34.3	-		6.7
Opticianry research:								
None	7,891	100.0	68.8	10.3	4.3	5.6	3.8	7.2
1-9 percent	881	100.0	76.6	7.0	2.7	4.7	2.9	6.1
10-39 percent	1,735	100.0	72.8	7.7	6.1	4.4	2.8	6.3
40-59 percent	243	100.0	59.8	4.0	21.6	4.3	3.3	7.0
60-99 percent	163	100.0	54.4	2.1	30.1	2.6	2.2	8.6
100 percent	50	100.0	34.9	-	48.9	-	2.2	14.0
Teaching opticianry:								
None	10,119	100.0	69.1	9.6	5.6	5.2	3.6	7.0
1-9 percent	589	100.0	74.5	6.0	3.1	6.0	3.4	7.0
10-39 percent	246	100.0	75.1	6.1	5.6	3.6	1.0	8.6
40-59 percent	6	100.0	46.9	-	-	-	-	53.1
60-99 percent	2	100.0	-	-	-	-	-	100.0
100 percent	2	100.0	-	-	-	-	-	100.0
Clerical activites:								
None	10,804	100.0	69.6	9.4	5.4	5.1	3.6	6.9
1-9 percent	82	100.0	73.9	1.8	4.1	13.6	-	6.6
10-39 percent	66	100.0	49.8	11.1	13.5	11.3	-	14.3
40-59 percent	3	100.0	-	60.2	-	-	-	39.8
60-99 percent	6	100.0	15.5	-	-	15.5	-	68.9
100 percent	2	100.0	-	-	-	-	-	100.0
Other types of activites:								
None	10,274	100.0	70.3	9.2	5.0	5.2	3.6	6.7
1-9 percent	178	100.0	74.8	7.3	1.2	5.1	2.6	9.0
10-39 percent	338	100.0	59.2	11.3	10.7	7.1	1.9	9.9
40-59 percent	68	100.0	45.6	18.2	16.0	6.7	1.9	11.6
60-99 percent	68	100.0	29.6	10.3	27.4	5.9	6.8	20.1
100 percent	37	100.0	22.8	-	44.8	6.9	3.8	21.7

Table 18. Number of active opticians, by self-classification of specialties and geographic location of employment: United States, 1969

Geographic location of employment	All active opticians	Self-classification of specialties					
		Dispensing optician only	Dispensing optician and optical mechanic	Dispensing optician and contact lens technician	Dispensing optician, optical mechanic, and contact lens technician	Dispensing optician and all other specialties	Non-dispensing optician
United States	10,963	3,849	2,962	894	1,289	1,337	632
Geographic region:							
Northeast	3,178	1,246	977	201	306	291	158
North Central	2,803	951	752	206	281	414	199
South	3,262	1,138	817	323	450	389	146
West	1,720	514	417	164	253	243	129
Geographic division:							
New England	786	316	252	41	73	69	35
Middle Atlantic	2,392	930	725	160	233	221	123
East North Central	1,805	611	509	122	172	263	127
West North Central	998	339	243	84	109	151	72
South Atlantic	1,727	620	470	146	248	185	60
East South Central	552	214	124	69	69	51	26
West South Central	983	304	223	109	133	153	60
Mountain	635	230	155	63	73	86	29
Pacific	1,086	285	262	101	180	157	100
State:							
Alabama	163	63	38	20	20	14	7
Alaska	14	7	2	1	-	2	1
Arizona	109	24	21	11	24	24	3
Arkansas	33	13	8	2	2	7	2
California	732	191	169	71	123	112	66
Colorado	256	116	45	22	22	38	13
Connecticut	199	67	58	18	33	15	8
Delaware	48	16	27	-	1	3	1
District of Columbia	138	43	51	5	17	15	7
Florida	434	180	92	40	71	44	7
Georgia	254	97	40	36	44	33	4
Hawaii	55	22	16	3	6	4	3
Idaho	21	5	5	3	5	2	1
Illinois	426	129	133	26	50	55	34
Indiana	212	79	48	10	18	30	27
Iowa	170	59	24	24	28	28	6
Kansas	99	41	22	2	8	16	10
Kentucky	159	62	35	22	17	15	8
Louisiana	152	60	51	14	7	16	4
Maine	10	5	1	1	1	2	-

Table 18. Number of active opticians, by self-classification of specialties and geographic location of employment: United States, 1969—Con.

Geographic location of employment	All active opticians	Self-classification of specialties					
		Dispensing optician only	Dispensing optician and optical mechanic	Dispensing optician and contact lens technician	Dispensing optician, optical mechanic, and contact lens technician	Dispensing optician and all other specialties	Non-dispensing optician
State—Con.							
Maryland	316	92	133	10	31	36	13
Massachusetts	473	201	153	17	34	43	25
Michigan	366	129	114	21	25	63	14
Minnesota	283	101	60	36	21	50	14
Mississippi	64	22	15	10	7	8	2
Missouri	277	94	88	9	29	26	30
Montana	53	10	20	9	9	4	1
Nebraska	113	29	32	9	14	18	10
Nevada	23	9	7	1	3	1	2
New Hampshire	30	13	6	5	-	4	2
New Jersey	337	182	105	1	13	18	18
New Mexico	48	23	18	1	4	2	-
New York	1,357	501	411	112	151	133	49
North Carolina	165	45	38	24	26	19	11
North Dakota	20	6	4	-	4	5	1
Ohio	566	218	145	44	54	67	38
Oklahoma	130	36	34	8	31	14	7
Oregon	106	22	27	5	18	24	10
Pennsylvania	698	247	209	47	69	70	56
Rhode Island	66	25	34	-	4	4	-
South Carolina	57	22	10	7	10	4	4
South Dakota	37	9	12	3	5	8	-
Tennessee	167	67	36	17	26	13	9
Texas	667	195	130	85	94	116	48
Utah	118	41	33	16	5	14	8
Vermont	8	6	-	-	1	1	-
Virginia	254	103	64	20	37	22	8
Washington	179	43	48	21	33	15	20
West Virginia	62	22	14	3	10	8	4
Wisconsin	235	56	69	22	25	47	15
Wyoming	8	1	5	-	2	-	-

Table 19. Number and percent distribution of active opticians by self-classification of specialties, according to geographic location of employment: United States, 1969

Geographic location of employment	Number of active opticians	Total	Self-classification of specialties					
			Dispensing optician only	Dispensing optician and optical mechanic	Dispensing optician and contact lens technician	Dispensing optician, optical mechanic, and contact lens technician	Dispensing optician and all other specialties	Nondispensing optician
		Percent distribution						
United States	10,963	100.0	35.1	27.0	8.2	11.8	12.2	5.8
Geographic region:								
Northeast	3,178	100.0	39.2	30.7	6.3	9.6	9.1	5.0
North Central	2,803	100.0	33.9	26.8	7.4	10.0	14.8	7.1
South	3,262	100.0	34.9	25.0	9.9	13.8	11.9	4.5
West	1,720	100.0	29.9	24.2	9.5	14.7	14.1	7.5
Geographic division:								
New England	786	100.0	40.2	32.0	5.2	9.3	8.8	4.5
Middle Atlantic	2,392	100.0	38.9	30.3	6.7	9.7	9.3	5.1
East North Central	1,805	100.0	33.9	28.2	6.8	9.5	14.6	7.1
West North Central	998	100.0	34.0	24.3	8.4	10.9	15.1	7.2
South Atlantic	1,727	100.0	35.9	27.2	8.4	14.3	10.7	3.5
East South Central	552	100.0	38.7	22.4	12.4	12.5	9.3	4.7
West South Central	983	100.0	30.9	22.7	11.1	13.5	15.6	6.2
Mountain	635	100.0	36.2	24.4	9.9	11.5	13.6	4.5
Pacific	1,086	100.0	26.2	24.1	9.3	16.6	14.5	9.2
State:								
Alabama	163	100.0	38.9	23.3	12.2	12.2	8.9	4.4
Alaska	14	100.0	50.0	16.7	8.3	-	16.7	8.3
Arizona	109	100.0	22.4	19.7	10.5	22.4	22.4	2.8
Arkansas	33	100.0	40.0	25.0	5.0	5.0	20.0	5.0
California	732	100.0	26.1	23.1	9.7	16.9	15.2	9.0
Colorado	256	100.0	45.5	17.5	8.4	8.4	14.9	5.2
Connecticut	199	100.0	33.7	29.0	8.8	16.6	7.8	4.1
Delaware	48	100.0	32.4	55.9	-	2.9	5.9	2.9
District of Columbia	138	100.0	31.3	37.3	3.6	12.0	10.8	4.8
Florida	434	100.0	41.4	21.3	9.3	16.4	10.2	1.5
Georgia	254	100.0	38.0	15.8	14.1	17.4	13.0	1.6
Hawaii	55	100.0	40.5	29.7	5.4	10.8	8.1	5.4
Idaho	21	100.0	23.8	23.8	14.3	23.8	9.5	4.8
Illinois	426	100.0	30.2	31.2	6.0	11.6	13.0	7.9
Indiana	212	100.0	37.4	22.6	4.5	8.4	14.2	12.9
Iowa	170	100.0	34.5	14.3	14.3	16.7	16.7	3.6
Kansas	99	100.0	41.4	22.2	2.0	8.1	16.2	10.1
Kentucky	159	100.0	39.0	22.0	13.8	10.7	9.4	5.0
Louisiana	152	100.0	39.2	33.6	9.2	4.6	10.8	2.3
Maine	10	100.0	50.0	10.0	10.0	10.0	20.0	-
Maryland	316	100.0	29.2	42.0	3.3	9.9	11.3	4.2
Massachusetts	473	100.0	42.5	32.3	3.6	7.2	9.1	5.3
Michigan	366	100.0	35.1	31.3	5.7	6.8	17.3	3.9
Minnesota	283	100.0	35.6	21.3	12.9	7.4	17.8	5.0
Mississippi	64	100.0	34.2	23.7	15.8	10.5	13.2	2.6

Table 19. Number and percent distribution of active opticians by self-classification of specialties, according to geographic location of employment: United States, 1969—Con.

Geographic location of employment	Number of active opticians	Total	Self-classification of specialties					
			Dispensing optician only	Dispensing optician and optical mechanic	Dispensing optician and contact lens technician	Dispensing optician, optical mechanic, and contact lens technician	Dispensing optician and all other specialties	Nondispensing optician
		Percent distribution						
State—Con.								
Missouri	277	100.0	34.1	31.9	3.3	10.4	9.3	11.0
Montana	53	100.0	18.9	37.8	16.2	16.2	8.1	2.7
Nebraska	113	100.0	26.1	28.4	8.0	12.5	15.9	9.1
Nevada	23	100.0	39.1	30.4	4.3	13.0	4.3	8.7
New Hampshire	30	100.0	43.3	20.0	16.7	-	13.3	6.7
New Jersey	337	100.0	53.9	31.1	0.4	3.7	5.4	5.4
New Mexico	48	100.0	47.5	37.5	2.5	7.5	5.0	-
New York	1,357	100.0	36.9	30.3	8.3	11.1	9.8	3.6
North Carolina	165	100.0	27.6	23.3	14.7	16.0	11.7	6.7
North Dakota	20	100.0	30.0	20.0	-	20.0	25.0	5.0
Ohio	566	100.0	38.6	25.6	7.9	9.6	11.8	6.6
Oklahoma	130	100.0	28.0	25.8	6.5	23.7	10.8	5.4
Oregon	106	100.0	20.6	25.4	4.8	17.5	22.2	9.5
Pennsylvania	698	100.0	35.4	29.9	6.7	9.9	10.1	8.0
Rhode Island	66	100.0	37.1	51.4	-	5.7	5.7	-
South Carolina	57	100.0	38.6	17.5	12.3	17.5	7.0	7.0
South Dakota	37	100.0	25.0	33.3	8.3	12.5	20.8	-
Tennessee	167	100.0	40.0	21.3	10.0	15.3	8.0	5.3
Texas	667	100.0	29.2	19.5	12.7	14.0	17.4	7.2
Utah	118	100.0	35.1	28.4	13.5	4.1	12.2	6.8
Vermont	8	100.0	71.4	-	-	14.3	14.3	-
Virginia	254	100.0	40.5	25.1	7.9	14.4	8.8	3.3
Washington	179	100.0	23.8	26.6	11.9	18.2	8.4	11.2
West Virginia	62	100.0	36.1	23.0	4.9	16.4	13.1	6.6
Wisconsin	235	100.0	24.0	29.5	9.3	10.9	20.2	6.2
Wyoming	8	100.0	12.5	62.5	-	25.0	-	-

Table 20. Number of active opticians, by self-classification of specialties and selected characteristics: United States, 1969

Characteristic	All active opticians	Self-classification of specialties					
		Dispensing optician only	Dispensing optician and optical mechanic	Dispensing optician and contact lens technician	Dispensing optician, optical mechanic, and contact lens technician	Dispensing optician and all other specialties	Non-dispensing optician
All active opticians	10,963	3,849	2,962	894	1,289	1,337	632
Sex:							
Male	9,709	3,172	2,818	815	1,249	1,192	463
Female	1,254	677	144	80	40	145	169
Years of schooling:							
High school:							
1 year or less	587	182	243	12	47	59	44
2 years	536	194	208	20	48	43	23
3 years	588	170	214	33	55	66	49
4 years	5,120	1,878	1,445	343	588	593	274
College:							
1 year	1,241	411	287	134	159	170	80
2 years	1,659	562	358	182	241	237	80
3 years	454	165	83	59	47	75	24
4 years	576	218	97	82	76	63	40
5 years or more	203	69	27	29	29	32	17
Weeks per year and hours per week worked:							
Under 48 weeks:							
1-34 hours	183	94	45	3	14	13	14
35 hours and over	179	74	48	11	17	25	4
48-52 weeks:							
1-34 hours	623	292	140	32	44	55	61
35-40 hours	4,228	1,584	1,096	325	389	497	336
41-49 hours	3,796	1,251	1,102	346	493	460	144
50 hours and over	1,953	554	530	177	332	286	74
Schools of opticianry attended:							
None	9,974	3,508	2,729	790	1,147	1,200	600
Erie County Technical Institute	331	140	45	52	44	39	11
Ferris State College	29	12	9	3	1	3	-
Los Angeles City College	104	34	19	10	17	15	8
New York City Community College	83	26	25	5	11	13	4
Eveleth Area Vocational-Technical School	4	-	1	1	-	2	-
Military schools of opticianry	438	129	134	33	69	65	9
Months attending opticianry school:							
1-12 months	205	56	62	17	31	28	10
13-24 months	600	233	125	67	82	75	17
25 months and over	184	52	45	19	29	33	5
None	9,974	3,508	2,729	790	1,147	1,200	600
Training in opticianry:							
On the job	6,778	2,591	1,895	482	662	698	450
Registered apprentice	500	180	127	40	76	55	21
Other	547	161	169	45	73	74	25
On the job, registered apprentice	739	209	251	52	101	93	33
On the job, other	1,483	411	325	167	249	262	69
Registered apprentice, other	127	32	28	19	24	23	2
On the job, registered apprentice, other	354	72	76	45	52	90	19
No training at place of employment	436	193	92	44	53	42	13

Table 21. Number and percent distribution of active opticians by self-classification of specialties, according to selected characteristics: United States, 1969

Characteristic	Number of active opticians	Total	Self-classification of specialties: Dispensing optician only	Dispensing optician and optical mechanic	Dispensing optician and contact lens technician	Dispensing optician, optical mechanic, and contact lens technician	Dispensing optician and all other specialties	Non-dispensing optician
		Percent distribution						
All active opticians	10,963	100.0	35.1	27.0	8.2	11.8	12.2	5.8
Sex:								
Male	9,709	100.0	32.7	29.0	8.4	12.9	12.3	4.8
Female	1,254	100.0	54.0	11.5	6.3	3.2	11.5	13.5
Age:								
Under 25 years	683	100.0	42.7	18.9	5.7	6.1	10.1	16.4
25-34 years	2,093	100.0	38.1	20.0	11.1	10.2	12.2	8.4
35-44 years	2,579	100.0	34.4	24.0	10.3	13.3	12.4	5.5
45-54 years	3,449	100.0	31.3	30.1	7.3	14.0	13.4	3.7
55-64 years	1,582	100.0	34.1	34.6	5.7	10.8	11.6	3.2
65 years and over	578	100.0	43.8	36.0	2.4	6.2	8.0	3.7
Years of schooling:								
High school:								
1 year or less	587	100.0	31.0	41.3	2.1	8.0	10.1	7.6
2 years	536	100.0	36.2	38.8	3.7	9.0	8.0	4.4
3 years	588	100.0	28.9	36.5	5.6	9.3	11.3	8.4
4 years	5,120	100.0	36.7	28.2	6.7	11.5	11.6	5.4
College:								
1 year	1,241	100.0	33.1	23.1	10.8	12.8	13.7	6.4
2 years	1,659	100.0	33.9	21.6	11.0	14.5	14.3	4.8
3 years	454	100.0	36.4	18.3	13.0	10.4	16.5	5.3
4 years	576	100.0	37.8	16.8	14.3	13.1	11.0	7.0
5 years or more	203	100.0	34.3	13.1	14.1	14.5	15.8	8.2
Principal place of employment:								
Retail optical establishment	3,849	100.0	73.8	8.8	1.9	4.7	4.3	6.6
Optometrist, ophthalmologist, or other physician	2,962	100.0	70.3	8.1	7.9	4.3	4.0	5.4
Ophthalmic goods wholesaler	894	100.0	70.7	11.3	1.7	7.3	1.9	7.1
Hospital or clinic	1,289	100.0	73.2	10.5	3.3	6.0	2.2	4.8
Department store optical department	1,337	100.0	61.5	10.6	8.3	6.5	2.9	10.1
Other	632	100.0	46.1	10.3	19.1	6.1	2.8	15.5
Weeks per year and hours per week worked:								
Under 48 weeks:								
1-34 hours	183	100.0	51.1	24.6	1.7	7.6	7.4	7.6
35 hours and over	179	100.0	41.4	26.6	6.3	9.6	14.0	2.2
48-52 weeks:								
1-34 hours	623	100.0	46.8	22.5	5.1	7.0	8.8	9.7
35-40 hours	4,228	100.0	37.5	25.9	7.7	9.2	11.8	8.0
41-49 hours	3,796	100.0	33.0	29.0	9.1	13.0	12.1	3.8
50 hours and over	1,953	100.0	28.4	27.1	9.0	17.0	14.7	3.8

Table 22. Number and percent distribution of active opticians by self-classification of specialties, according to selected characteristics: United States, 1969

Characteristic	Number of active opticians	Total	Self-classification of specialties					
			Dispensing optician only	Dispensing optician and optical mechanic	Dispensing optician and contact lens technician	Dispensing optician, optical mechanic, and contact lens technician	Dispensing optician and all other specialties	Non-dispensing optician
		Percent distribution						
All active opticians	10,963	100.0	35.1	27.0	8.2	11.8	12.2	5.8
Number of years in opticianry:								
1-4 years	1,087	100.0	47.5	15.1	6.6	3.9	9.6	17.2
5-9 years	1,423	100.0	41.6	20.6	10.9	8.4	11.2	7.3
10-19 years	2,407	100.0	38.7	20.9	10.3	11.5	12.5	6.2
20-29 years	3,100	100.0	30.6	29.7	8.3	14.5	13.4	3.5
30-39 years	1,980	100.0	28.2	34.6	6.3	15.5	13.0	2.5
40 years and over	967	100.0	31.5	40.8	4.0	9.9	10.5	3.3
Schools of opticianry attended:								
None	9,974	100.0	35.2	27.4	7.9	11.5	12.0	6.0
Erie County Technical Institute	331	100.0	42.3	13.5	15.8	13.3	11.8	3.3
Ferris State College	29	100.0	42.8	32.3	10.1	3.5	11.4	-
Los Angeles City College	104	100.0	32.9	18.5	9.6	16.1	14.7	8.2
New York City Community College	83	100.0	31.0	29.9	5.6	13.5	15.1	4.9
Eveleth Area Vocational-Technical School	4	100.0	-	24.4	31.3	-	44.3	-
Military schools of opticianry	438	100.0	29.4	30.5	7.5	15.8	14.8	2.0
Months attending opticianry school:								
1-12 months	205	100.0	27.2	30.3	8.5	15.1	13.8	5.0
12-24 months	600	100.0	38.9	20.9	11.2	13.6	12.5	2.8
25 months and over	184	100.0	28.1	24.6	10.5	16.0	18.1	2.6
None	9,974	100.0	35.2	27.4	7.9	11.5	12.0	6.0
Training in opticianry:								
On the job	6,778	100.0	38.2	28.0	7.1	9.8	10.3	6.6
Registered apprentice	500	100.0	36.1	25.4	8.0	15.1	11.1	4.2
Other	547	100.0	29.4	30.9	8.2	13.4	13.5	4.6
On the job, registered apprentice	739	100.0	28.3	34.0	7.1	13.7	12.6	4.4
On the job, other	1,483	100.0	27.7	21.9	11.3	16.8	17.7	4.7
Registered apprentice, other	127	100.0	25.0	22.1	14.6	18.7	17.8	1.8
On the job, registered apprentice, other	354	100.0	20.2	21.3	12.8	14.7	25.5	5.4
No training at place of employment	436	100.0	44.3	21.0	10.0	12.1	9.7	2.9

Table 23. Number of active opticians, by self-classification of specialties and percentage of hours per week spent in specific activities related to employment: United States, 1969

Percentage of hours per week spent in specific activities related to employment	All active opticians	Self-classification of specialties					
		Dispensing optician only	Dispensing optician and optical mechanic	Dispensing optician and contact lens technician	Dispensing optician, optical mechanic, and contact lens technician	Dispensing optician and all other specialties	Non-dispensing optician
All active opticians	10,963	3,849	2,962	894	1,289	1,337	632
Shopwork:							
None	3,135	1,520	421	367	256	338	233
1-9 percent	899	265	201	101	145	157	30
10-39 percent	4,161	1,317	1,173	344	651	578	97
40-59 percent	1,692	564	689	67	173	155	46
60-99 percent	798	155	408	10	56	98	71
100 percent	278	29	69	5	8	12	155
Fitting and adjusting eyeglasses:							
None	1,003	129	177	72	68	106	451
1-9 percent	203	25	63	21	21	61	12
10-39 percent	1,699	389	497	175	266	306	66
40-59 percent	2,700	907	785	262	384	316	46
60-99 percent	4,318	1,684	1,222	350	523	495	44
100 percent	1,040	714	217	14	27	54	14
Fitting and adjusting contact lenses:							
None	8,025	3,456	2,839	130	362	849	388
1-9 percent	546	112	36	87	189	113	10
10-39 percent	1,665	217	58	467	585	290	48
40-59 percent	300	24	12	96	85	49	35
60-99 percent	338	33	14	107	46	31	106
100 percent	89	7	3	7	22	5	45
Administrative activities:							
None	6,210	2,202	1,805	451	700	641	409
1-9 percent	1,352	391	324	154	203	231	49
10-39 percent	3,006	1,068	775	276	375	400	112
40-59 percent	265	136	37	10	7	38	38
60-99 percent	112	44	17	2	5	23	23
100 percent	19	8	4	1	-	4	1
Opticianry research:							
None	7,891	2,983	2,249	565	801	781	512
1-9 percent	881	239	203	100	161	152	26
10-39 percent	1,735	492	404	193	285	299	62
40-59 percent	243	72	58	21	21	61	9
60-99 percent	163	50	36	14	16	34	12
100 percent	50	13	11	-	5	10	11
Teaching opticianry:							
None	10,119	3,643	2,803	801	1,122	1,162	587
1-9 percent	589	138	117	71	114	122	27
10-39 percent	246	66	40	20	54	51	15
40-59 percent	6	1	-	2	-	2	1
60-99 percent	2	-	-	-	-	-	2
100 percent	2	-	2	-	-	-	-
Clerical activities:							
None	10,804	3,812	2,948	872	1,268	1,286	618
1-9 percent	82	20	8	15	12	21	6
10-39 percent	66	16	6	6	9	23	6
40-59 percent	3	-	-	-	-	3	-
60-99 percent	6	1	-	1	-	4	-
100 percent	2	-	-	-	-	-	2
Other types of activities:							
None	10,274	3,709	2,849	860	1,216	1,082	558
1-9 percent	178	33	32	13	16	73	12
10-39 percent	338	72	59	16	43	125	24
40-59 percent	68	18	8	-	7	25	10
60-99 percent	68	13	10	5	4	24	12
100 percent	37	6	5	-	3	7	16

Table 24. Number and percent distribution of active opticians by self-classification of specialties, according to percentage of hours per week spent in specific activities related to employment: United States, 1969

Percentage of hours per week spent in specific activities related to employment	Number of active opticians	Total	Self-classification of specialties					
			Dispensing optician only	Dispensing optician and optical mechanic	Dispensing optician and contact lens technician	Dispensing optician, optical mechanic, and contact lens technician	Dispensing optician and all other specialties	Non-dispensing optician
		Percent distribution						
All active opticians	10,963	100.0	35.1	27.0	8.2	11.8	12.2	5.8
Shopwork:								
None	3,135	100.0	48.5	13.4	11.7	8.2	10.8	7.4
1-9 percent	899	100.0	29.5	22.4	11.2	16.1	17.4	3.4
10-39 percent	4,161	100.0	31.7	28.2	8.3	15.7	13.9	2.3
40-59 percent	1,692	100.0	33.3	40.7	3.9	10.2	9.1	2.7
60-99 percent	798	100.0	19.4	51.1	1.3	7.1	12.2	8.9
100 percent	278	100.0	10.3	24.9	1.9	3.0	4.3	55.6
Fitting and adjusting eyeglasses:								
None	1,003	100.0	12.9	17.7	7.2	6.8	10.5	44.9
1-9 percent	203	100.0	12.5	31.1	10.5	10.3	29.9	5.8
10-39 percent	1,699	100.0	22.9	29.3	10.3	15.7	18.0	3.9
40-59 percent	2,700	100.0	33.6	29.1	9.7	14.2	11.7	1.7
60-99 percent	4,318	100.0	39.0	28.3	8.1	12.1	11.5	1.0
100 percent	1,040	100.0	68.6	20.9	1.4	2.6	5.2	1.3
Fitting and adjusting contact lenses:								
None	8,025	100.0	43.1	35.4	1.6	4.5	10.6	4.8
1-9 percent	546	100.0	20.4	6.5	15.9	34.6	20.7	1.9
10-39 percent	1,665	100.0	13.0	3.5	28.0	35.1	17.4	2.9
40-59 percent	300	100.0	8.0	3.9	31.9	28.2	16.3	11.7
60-99 percent	338	100.0	9.9	4.2	31.8	13.7	9.2	31.3
100 percent	89	100.0	7.9	3.3	8.0	24.9	6.1	49.9
Administrative activities:								
None	6,210	100.0	35.5	29.1	7.3	11.3	10.3	6.6
1-9 percent	1,352	100.0	28.9	24.0	11.4	15.0	17.1	3.6
10-39 percent	3,006	100.0	35.5	25.8	9.2	12.5	13.3	3.7
40-59 percent	265	100.0	51.2	13.8	3.7	2.5	14.3	14.5
60-99 percent	112	100.0	39.0	15.1	1.6	4.1	20.1	20.1
100 percent	19	100.0	41.6	23.9	6.7	-	20.2	7.6
Opticianry research:								
None	7,891	100.0	37.8	28.5	7.2	10.2	9.9	6.5
1-9 percent	881	100.0	27.2	23.1	11.4	18.2	17.2	2.9
10-39 percent	1,735	100.0	28.4	23.3	11.1	16.5	17.2	3.6
40-59 percent	243	100.0	29.6	24.0	8.9	8.7	25.1	3.8
60-99 percent	163	100.0	30.9	22.0	8.8	10.0	21.1	7.2
100 percent	50	100.0	26.6	22.7	-	9.1	20.4	21.2
Teaching opticianry:								
None	10,119	100.0	36.0	27.7	7.9	11.1	11.5	5.8
1-9 percent	589	100.0	23.5	19.8	12.0	19.4	20.7	4.7
10-39 percent	246	100.0	26.9	16.2	8.2	21.9	20.8	6.0
40-59 percent	6	100.0	17.7	-	35.4	-	29.2	17.7
60-99 percent	2	100.0	-	-	-	-	-	100.0
100 percent	2	100.0	-	100.0	-	-	-	-
Clerical activities:								
None	10,804	100.0	35.3	27.3	8.1	11.7	11.9	5.7
1-9 percent	82	100.0	24.5	9.4	17.9	15.1	25.5	7.6
10-39 percent	66	100.0	24.1	8.8	9.2	14.2	34.6	9.0
40-59 percent	3	100.0	-	-	-	-	100.0	-
60-99 percent	6	100.0	15.5	-	15.5	-	68.9	-
100 percent	2	100.0	-	-	-	-	-	100.0
Other types of activities:								
None	10,274	100.0	36.1	27.7	8.4	11.8	10.5	5.4
1-9 percent	178	100.0	18.3	17.7	7.1	9.1	41.1	6.7
10-39 percent	338	100.0	21.2	17.3	4.9	12.7	36.9	7.0
40-59 percent	68	100.0	26.6	11.6	-	10.5	36.7	14.7
60-99 percent	68	100.0	18.3	14.5	7.7	6.1	35.9	17.5
100 percent	37	100.0	15.7	13.4	-	7.7	19.5	43.7

Table 25. Number of active opticians, by weeks per year and hours per week worked and geographic location of employment: United States, 1969

Geographic location of employment	All active opticians	Under 48 weeks per year			48 to 52 weeks per year				
		Total	Hours per week		Total	Hours per week			
			1-34	35 or more		1-34	35-40	41-49	50-99
United States	10,963	363	183	179	10,601	623	4,228	3,796	1,953
Geographic region:									
Northeast	3,178	170	98	72	3,008	238	1,209	918	643
North Central	2,803	73	30	43	2,730	128	1,116	981	504
South	3,262	70	30	40	3,193	144	1,182	1,340	527
West	1,720	50	26	24	1,670	113	721	556	279
Geographic division:									
New England	786	36	20	16	750	90	310	204	146
Middle Atlantic	2,392	134	78	56	2,258	148	899	714	497
East North Central	1,805	38	17	21	1,767	83	755	608	320
West North Central	998	35	12	22	963	45	361	373	185
South Atlantic	1,727	41	20	21	1,686	65	631	701	290
East South Central	552	16	7	9	536	30	255	172	80
West South Central	983	13	2	11	970	49	296	467	158
Mountain	635	12	6	6	623	28	204	279	112
Pacific	1,086	38	21	18	1,047	85	517	278	167
State:									
Alabama	163	4	-	4	159	13	60	58	29
Alaska	14	2	1	1	12	-	4	5	4
Arizona	109	1	1	-	107	3	26	59	20
Arkansas	33	-	-	-	33	2	18	10	3
California	732	20	14	7	711	64	336	199	112
Colorado	256	3	-	3	252	10	80	123	40
Connecticut	199	3	-	3	196	12	82	63	38
Delaware	48	-	-	-	48	3	11	27	7
District of Columbia	138	3	2	2	134	3	73	46	12
Florida	434	16	7	9	418	17	121	193	87
Georgia	254	1	-	1	253	6	88	126	33
Hawaii	55	4	-	4	51	3	27	12	9
Idaho	21	-	-	-	21	2	3	9	7
Illinois	426	8	6	2	418	28	154	149	87
Indiana	212	8	4	4	204	10	92	56	47
Iowa	170	8	2	6	162	4	55	71	32
Kansas	99	2	2	-	97	5	36	34	22
Kentucky	159	5	4	1	154	11	84	43	16
Louisiana	152	7	2	5	145	7	73	47	19
Maine	10	-	-	-	10	2	1	5	2

Table 25. Number of active opticians, by weeks per year and hours per week worked and geographic location of employment: United States, 1969—Con.

Geographic location of employment	All active opticians	Under 48 weeks per year			48 to 52 weeks per year				
		Total	Hours per week		Total	Hours per week			
			1-34	35 or more		1-34	35-40	41-49	50-99
State—Con.									
Maryland	316	6	3	3	310	13	106	122	69
Massachusetts	473	29	19	10	444	71	190	105	78
Michigan	366	10	2	8	356	14	166	126	50
Minnesota	283	11	6	6	272	11	95	127	38
Mississippi	64	5	3	2	59	5	27	18	8
Missouri	277	11	2	9	266	18	94	85	68
Montana	53	1	-	1	51	1	20	24	6
Nebraska	113	1	1	-	111	6	58	33	14
Nevada	23	1	1	-	22	-	7	8	7
New Hampshire	30	4	1	3	26	1	11	11	3
New Jersey	337	17	8	8	321	7	85	129	99
New Mexico	48	-	-	-	48	7	19	11	11
New York	1,357	88	52	36	1,269	100	574	366	228
North Carolina	165	1	-	1	164	2	92	47	22
North Dakota	20	-	-	-	20	-	6	7	7
Ohio	566	8	1	7	557	26	254	186	90
Oklahoma	130	-	-	-	130	8	36	62	24
Oregon	106	5	3	2	101	7	45	32	17
Pennsylvania	698	29	17	12	669	41	239	219	169
Rhode Island	66	-	-	-	66	4	21	19	23
South Carolina	57	2	1	1	55	2	17	22	14
South Dakota	37	2	-	2	35	-	17	15	3
Tennessee	167	2	-	2	164	1	84	52	27
Texas	667	6	-	6	661	32	169	349	112
Utah	118	5	3	2	113	5	48	43	17
Vermont	8	-	-	-	8	-	5	1	2
Virginia	254	6	4	2	248	15	100	94	38
Washington	179	6	3	4	173	11	105	30	26
West Virginia	62	5	4	1	57	3	22	23	8
Wisconsin	235	4	4	-	231	5	89	91	46
Wyoming	8	-	-	-	8	-	2	2	4

Table 26. Number and percent distribution of active opticians by weeks per year and hours per week worked, according to geographic location of employment: United States, 1969

Geographic location of employment	Number of active opticians	Under 48 weeks per year			Number of active opticians	48 to 52 weeks per year				
		Total	Hours per week			Total	Hours per week			
			1-34	35 or more			1-34	35-40	41-49	50-99
		Percent distribution				Percent distribution				
United States	363	100.0	50.5	49.5	10,601	100.0	5.9	39.9	35.8	18.4
Geographic region:										
Northeast	170	100.0	57.5	42.5	3,008	100.0	7.9	40.2	30.5	21.4
North Central	73	100.0	40.8	59.2	2,730	100.0	4.7	40.9	35.9	18.5
South	70	100.0	42.6	57.4	3,193	100.0	4.5	37.0	42.0	16.5
West	50	100.0	52.0	48.0	1,670	100.0	6.8	43.2	33.3	16.7
Geographic division:										
New England	36	100.0	55.4	44.6	750	100.0	12.0	41.3	27.2	19.5
Middle Atlantic	134	100.0	58.1	41.9	2,258	100.0	6.6	39.8	31.6	22.0
East North Central	38	100.0	45.5	54.5	1,767	100.0	4.7	42.8	34.4	18.1
West North Central	35	100.0	35.8	64.2	963	100.0	4.7	37.4	38.7	19.2
South Atlantic	41	100.0	49.0	51.0	1,686	100.0	3.8	37.4	41.6	17.2
East South Central	16	100.0	46.3	53.7	536	100.0	5.6	47.5	32.0	14.9
West South Central	13	100.0	17.9	82.1	970	100.0	5.0	30.5	48.2	16.2
Mountain	12	100.0	46.9	53.1	623	100.0	4.5	32.8	44.7	18.0
Pacific	38	100.0	53.5	46.5	1,047	100.0	8.1	49.4	26.5	16.0
State:										
Alabama	4	100.0	-	100.0	159	100.0	8.0	37.5	36.4	18.2
Alaska	2	100.0	50.0	50.0	12	100.0	-	30.0	40.0	30.0
Arizona	1	100.0	100.0	-	107	100.0	2.7	24.0	54.7	18.7
Arkansas	-	-	-	-	33	100.0	5.0	55.0	30.0	10.0
California	20	100.0	66.7	33.3	711	100.0	9.0	47.3	28.0	15.7
Colorado	3	100.0	-	100.0	252	100.0	3.9	31.6	48.7	15.8
Connecticut	3	100.0	-	100.0	196	100.0	6.3	42.1	32.1	19.5
Delaware	-	-	-	-	48	100.0	5.9	23.5	55.9	14.7
District of Columbia	3	100.0	50.0	50.0	134	100.0	2.5	54.3	34.6	8.6
Florida	16	100.0	41.7	58.3	418	100.0	4.2	28.8	46.2	20.8
Georgia	1	100.0	-	100.0	253	100.0	2.2	35.0	49.7	13.1
Hawaii	4	100.0	-	100.0	51	100.0	5.9	52.9	23.5	17.6
Idaho	-	-	-	-	21	100.0	9.5	14.3	42.9	33.3
Illinois	8	100.0	75.0	25.0	418	100.0	6.6	37.0	35.5	20.9
Indiana	8	100.0	50.0	50.0	204	100.0	4.7	45.0	27.5	22.8
Iowa	8	100.0	25.0	75.0	162	100.0	2.5	33.7	43.7	20.0
Kansas	2	100.0	100.0	-	97	100.0	5.2	37.1	35.1	22.7
Kentucky	5	100.0	80.0	20.0	154	100.0	7.1	54.5	27.9	10.4
Louisiana	7	100.0	33.3	66.7	145	100.0	4.8	50.0	32.3	12.9
Maine	-	-	-	-	10	100.0	20.0	10.0	50.0	20.0

Table 26. Number and percent distribution of active opticians by weeks per year and hours per week worked, according to geographic location of employment: United States, 1969—Con.

Geographic location of employment	Number of active opticians	Under 48 weeks per year			Number of active opticians	48 to 52 weeks per year				
		Total	Hours per week			Total	Hours per week			
			1-34	35 or more			1-34	35-40	41-49	50-99
		Percent distribution				Percent distribution				
State—Con.										
Maryland	6	100.0	50.0	50.0	310	100.0	4.3	34.1	39.4	22.1
Massachusetts	29	100.0	65.5	34.5	444	100.0	16.0	42.8	23.6	17.6
Michigan	10	100.0	22.2	77.8	356	100.0	4.0	46.5	35.5	14.1
Minnesota	11	100.0	50.0	50.0	272	100.0	4.1	35.1	46.9	13.9
Mississippi	5	100.0	66.7	33.3	59	100.0	8.6	45.7	31.4	14.3
Missouri	11	100.0	14.3	85.7	266	100.0	6.9	35.4	32.0	25.7
Montana	1	100.0	-	100.0	51	100.0	2.8	38.9	47.2	11.1
Nebraska	1	100.0	100.0	-	111	100.0	5.7	51.7	29.9	12.6
Nevada	1	100.0	100.0	-	22	100.0	-	31.8	36.4	31.8
New Hampshire	4	100.0	25.0	75.0	26	100.0	3.8	42.3	42.3	11.5
New Jersey	17	100.0	50.0	50.0	321	100.0	2.2	26.6	40.2	31.0
New Mexico	-	-	-	-	48	100.0	15.0	40.0	22.5	22.5
New York	88	100.0	59.3	40.7	1,269	100.0	7.9	45.3	28.9	18.0
North Carolina	1	100.0	-	100.0	164	100.0	1.2	56.2	29.0	13.6
North Dakota	-	-	-	-	20	100.0	-	30.0	35.0	35.0
Ohio	8	100.0	16.7	83.3	557	100.0	4.7	45.6	33.4	16.2
Oklahoma	-	-	-	-	130	100.0	6.5	28.0	47.3	18.3
Oregon	5	100.0	66.7	33.3	101	100.0	6.7	45.0	31.7	16.7
Pennsylvania	29	100.0	59.1	40.9	669	100.0	6.2	35.8	32.8	25.2
Rhode Island	-	-	-	-	66	100.0	5.7	31.4	28.6	34.3
South Carolina	2	100.0	50.0	50.0	55	100.0	3.6	30.9	40.0	25.5
South Dakota	2	100.0	-	100.0	35	100.0	-	47.8	43.5	8.7
Tennessee	2	100.0	-	100.0	164	100.0	0.7	51.4	31.8	16.2
Texas	6	100.0	-	100.0	661	100.0	4.8	25.6	52.7	16.9
Utah	5	100.0	66.7	33.3	113	100.0	4.2	42.3	38.0	15.5
Vermont	-	-	-	-	8	100.0	-	57.1	14.3	28.6
Virginia	6	100.0	60.0	40.0	248	100.0	6.2	40.5	38.1	15.2
Washington	6	100.0	40.0	60.0	173	100.0	6.5	60.9	17.4	15.2
West Virginia	5	100.0	80.0	20.0	57	100.0	5.4	39.3	41.1	14.3
Wisconsin	4	100.0	100.0	-	231	100.0	2.4	38.6	39.4	19.7
Wyoming	-	-	-	-	8	100.0	-	25.0	25.0	50.0

Table 27. Number of active opticians, by weeks per year and hours per week worked and selected characteristics: United States, 1969

Characteristic	All active opticians	Under 48 weeks per year			48 to 52 weeks per year				
		Total	Hours per week		Total	Hours per week			
			1-34	35 or more		1-34	35-40	41-49	50-99
All active opticians	10,963	363	183	179	10,601	623	4,228	3,796	1,953
Sex:									
Male	9,709	293	137	156	9,416	466	3,577	3,492	1,881
Female	1,254	70	46	24	1,185	158	651	304	72
Years of schooling:									
High school:									
1 year or less	587	25	14	11	562	40	236	204	82
2 years	536	25	13	12	512	25	217	197	72
3 years	588	22	13	9	566	34	242	195	96
4 years	5,120	124	54	70	4,996	244	2,094	1,822	836
College:									
1 year	1,241	34	18	16	1,207	67	464	446	230
2 years	1,659	57	30	27	1,602	108	622	561	312
3 years	454	20	8	12	434	39	142	146	107
4 years	576	29	17	13	547	46	164	172	165
5 years or more	203	27	17	10	175	20	47	55	53
Training in opticianry:									
On the job	6,778	225	122	103	6,553	407	2,713	2,329	1,104
Registered apprentice	500	15	5	9	485	22	175	178	110
Other	547	23	12	11	524	53	205	170	96
On the job, registered apprentice	739	16	3	13	723	26	304	260	132
On the job, other	1,483	53	24	29	1,430	70	479	556	326
Registered apprentice, other	127	3	2	1	124	11	45	43	24
On the job, registered apprentice, other	354	9	5	4	345	12	121	128	83
None of the above	436	19	9	10	418	23	185	132	78
Principal place of employment:									
Retail optical establishment	7,614	250	122	127	7,365	343	2,730	2,805	1,486
Optometrist, ophthalmologist, or other physician	1,021	37	26	12	983	111	447	329	96
Ophthalmic goods wholesaler	595	17	7	10	579	27	231	163	158
Hospital or clinic	575	17	8	9	558	23	302	173	61
Department store optical department	386	7	4	3	378	34	205	88	51
Other	772	35	16	18	737	85	313	238	102
Months attending opticianry school:									
1-12 months	205	4	3	1	201	6	79	71	44
13-24 months	600	27	13	14	573	30	253	188	102
25 months and over	184	4	3	1	181	8	65	66	42
None	9,974	328	165	163	9,646	579	3,831	3,471	1,765

Table 28. Number and percent distribution of active opticians by weeks per year and hours per week worked, according to sex, age, years of schooling, and training in opticianry: United States, 1969

Characteristic	Number of active opticians	Under 48 weeks per year			Number of active opticians	48 to 52 weeks per year				
		Total	Hours per week			Total	Hours per week			
			1-34	35 or more			1-34	35-40	41-49	50-99
		Percent distribution				Percent distribution				
All active opticians	363	100.0	50.5	49.5	10,601	100.0	5.9	39.9	35.8	18.4
Sex:										
Male	293	100.0	46.9	53.1	9,416	100.0	4.9	38.0	37.1	20.0
Female	70	100.0	65.9	34.1	1,185	100.0	13.3	54.9	35.7	6.1
Age:										
Under 25 years	19	100.0	45.9	54.1	663	100.0	7.4	46.7	33.9	11.9
25-34 years	41	100.0	29.5	70.5	2,052	100.0	4.0	41.1	37.3	17.7
35-44 years	48	100.0	58.7	41.3	2,530	100.0	4.9	36.9	36.0	22.1
45-54 years	104	100.0	40.5	59.5	3,345	100.0	4.9	38.6	37.5	19.0
55-64 years	71	100.0	56.4	43.7	1,511	100.0	5.8	42.8	34.3	17.2
65 years and over	79	100.0	65.8	34.2	499	100.0	24.0	40.4	24.1	11.5
Years of schooling:										
High school:										
1 year or less	25	100.0	56.6	43.4	562	100.0	7.2	42.0	36.3	14.6
2 years	25	100.0	51.4	48.6	512	100.0	4.9	42.4	38.5	14.2
3 years	22	100.0	58.3	41.7	566	100.0	6.0	42.7	34.4	16.9
4 years	124	100.0	43.8	56.2	4,996	100.0	4.9	41.9	36.5	16.7
College:										
1 year	34	100.0	52.9	47.1	1,207	100.0	5.5	38.5	36.9	19.1
2 years	57	100.0	52.1	47.9	1,602	100.0	6.7	38.8	35.0	19.5
3 years	20	100.0	40.6	59.4	434	100.0	8.9	32.7	33.6	24.8
4 years	29	100.0	56.8	43.2	547	100.0	8.5	30.0	31.4	30.1
5 years or more	27	100.0	62.9	37.1	175	100.0	11.7	26.9	31.1	30.2
Training in opticianry:										
On the job	225	100.0	54.3	45.7	6,553	100.0	6.2	41.4	35.5	16.8
Registered apprentice	15	100.0	36.7	63.3	485	100.0	4.5	36.0	36.7	22.8
Other	23	100.0	51.5	48.5	524	100.0	10.1	39.2	32.5	18.2
On the job, registered apprentice	16	100.0	20.4	79.6	723	100.0	3.6	42.1	36.0	18.3
On the job, other	53	100.0	45.6	54.4	1,430	100.0	4.9	33.5	38.9	22.8
Registered apprentice, other	3	100.0	60.4	39.6	124	100.0	9.1	36.4	34.7	19.7
On the job, registered apprentice, other	9	100.0	58.8	41.2	345	100.0	3.5	35.1	37.2	24.2
No training at place of employment	19	100.0	49.1	50.9	418	100.0	5.4	44.3	31.6	18.6

Table 29. Number and percent distribution of active opticians by weeks per year and hours per week worked, according to selected characteristics: United States, 1969

Characteristic	Number of active opticians	Under 48 weeks per year			Number of active opticians	48 to 52 weeks per year				
		Total	Hours per week			Total	Hours per week			
			1-34	35 or more			1-34	35-40	41-49	50-99
		Percent distribution				Percent distribution				
All active opticians	363	100.0	50.5	49.5	10,601	100.0	5.9	39.9	35.8	18.4
Self-classification specialties:										
Dispensing optician only	168	100.0	55.8	44.2	3,681	100.0	7.9	43.0	34.0	15.1
Dispensing optician and optical mechanic	93	100.0	48.5	51.5	2,869	100.0	4.9	38.2	38.4	18.5
Dispensing optician and contact lens technician	14	100.0	22.0	78.0	880	100.0	3.6	37.0	39.3	20.1
Dispensing optician, optical mechanic, and contact lens technician	31	100.0	44.9	55.1	1,258	100.0	3.5	30.9	39.2	26.4
Dispensing optician and all other	39	100.0	35.0	65.0	1,299	100.0	4.2	38.3	35.4	22.1
Nondispensing optician	18	100.0	77.5	22.5	614	100.0	9.9	54.7	23.4	12.0
Principal place of employment:										
Retail optical establishment	250	100.0	49.0	51.0	7,365	100.0	4.7	37.1	38.1	20.2
Optometrist, ophthalmologist, or other physician	37	100.0	68.7	31.3	983	100.0	11.3	45.5	33.5	9.7
Ophthalmic goods wholesaler	17	100.0	40.0	60.0	579	100.0	4.6	39.9	28.1	27.3
Hospital or clinic	17	100.0	47.3	52.7	558	100.0	4.2	54.0	30.9	10.9
Department store optical department	7	100.0	58.0	42.0	378	100.0	8.9	54.2	23.3	13.6
Other	35	100.0	47.2	52.8	737	100.0	11.6	42.4	32.2	13.8
Number of years in opticianry:										
1-4 years	36	100.0	54.7	45.3	1,051	100.0	7.7	48.4	34.9	9.0
5-9 years	32	100.0	42.1	57.9	1,391	100.0	6.6	42.0	34.9	16.5
10-19 years	59	100.0	54.9	45.1	2,348	100.0	5.6	39.6	35.4	19.4
20-29 years	94	100.0	48.3	51.7	3,006	100.0	4.3	36.4	38.2	21.2
30-39 years	66	100.0	42.4	57.6	1,914	100.0	4.0	38.8	36.6	20.6
40 years and over	75	100.0	58.7	41.3	892	100.0	12.8	41.3	29.7	16.2
Months attending opticianry school:										
1-12 months	4	100.0	68.0	32.0	201	100.0	3.1	39.3	35.5	22.1
13-24 months	27	100.0	48.3	51.7	573	100.0	5.2	44.1	32.8	17.9
25 months and over	4	100.0	73.6	26.4	181	100.0	4.6	36.0	36.3	23.1
None	328	100.0	50.3	49.7	9,646	100.0	6.0	39.7	36.0	18.3

Table 30. Number of active opticians, by weeks per year and hours per week worked and percentage of hours per week spent in specific activities related to employment: United States, 1969

Percentage of hours per week spent in specific activities related to employment	All active opticians	Under 48 weeks per year			48 to 52 weeks per year				
		Total	Hours per week		Total	Hours per week			
			1-34	35 or more		1-34	35-40	41-49	50-99
All active opticians	10,963	363	183	179	10,601	623	4,228	3,796	1,953
Shopwork:									
None	3,135	139	85	54	2,996	267	1,371	976	382
1-9 percent	899	30	12	19	869	36	349	335	149
10-39 percent	4,161	123	49	74	4,038	179	1,439	1,597	823
40-59 percent	1,692	53	28	25	1,639	80	605	571	382
60-99 percent	798	12	7	5	787	41	297	261	188
100 percent	278	6	3	3	273	21	167	56	29
Fitting and adjusting eyeglasses:									
None	1,003	32	19	13	971	66	493	242	170
1-9 percent	203	7	5	2	196	12	76	56	52
10-39 percent	1,699	54	27	27	1,644	117	557	554	416
40-59 percent	2,700	89	44	45	2,611	135	951	937	588
60-99 percent	4,318	119	49	70	4,199	176	1,672	1,700	651
100 percent	1,040	61	40	22	979	117	479	308	76
Fitting and adjusting contact lenses:									
None	8,025	295	164	131	7,729	490	3,246	2,693	1,301
1-9 percent	546	14	2	11	533	15	150	232	136
10-39 percent	1,665	32	6	26	1,633	79	537	620	397
40-59 percent	300	8	3	6	292	13	109	115	55
60-99 percent	338	9	5	5	329	14	143	113	58
100 percent	89	4	3	1	85	13	43	23	6
Administrative activities:									
None	6,210	232	122	110	5,977	378	2,607	2,043	949
1-9 percent	1,352	29	9	20	1,323	44	420	557	302
10-39 percent	3,006	75	35	40	2,931	150	1,013	1,111	656
40-59 percent	265	15	10	5	250	30	138	58	23
60-99 percent	112	10	7	3	102	19	40	22	21
100 percent	19	1	-	1	18	2	9	4	2
Opticianry research:									
None	7,891	272	147	126	7,619	500	3,309	2,666	1,144
1-9 percent	881	16	6	9	867	27	226	372	242
10-39 percent	1,735	51	18	33	1,684	74	515	641	454
40-59 percent	243	11	5	6	232	10	95	72	56
60-99 percent	163	10	4	5	153	11	60	37	46
100 percent	50	5	4	1	45	2	23	9	12
Teaching opticianry:									
None	10,119	336	174	163	9,783	566	4,005	3,504	1,707
1-9 percent	589	17	6	10	572	27	150	224	172
10-39 percent	246	8	2	6	237	30	68	66	73
40-59 percent	6	-	-	-	6	-	4	1	1
60-99 percent	2	-	-	-	2	-	-	2	-
100 percent	2	1	1	-	1	-	1	-	-
Clerical activities:									
None	10,804	354	181	173	10,450	616	4,180	3,755	1,899
1-9 percent	82	1	-	1	81	-	27	20	34
10-39 percent	66	5	1	3	61	6	18	20	17
40-59 percent	3	-	-	-	3	-	2	-	1
60-99 percent	6	3	1	2	3	1	-	1	1
100 percent	2	-	-	-	2	-	2	-	-
Other types of activities:									
None	10,274	346	174	171	9,928	573	4,003	3,571	1,781
1-9 percent	178	2	2	-	176	7	49	63	56
10-39 percent	338	7	2	5	332	24	107	119	81
40-59 percent	68	2	-	2	66	13	25	16	13
60-99 percent	68	4	3	1	64	7	19	24	14
100 percent	37	2	2	-	35	-	24	3	8

Table 31. Number and percent distribution of active opticians by weeks per year and hours per week worked, according to percentage of hours per week spent in specific activities related to employment: United States, 1969

Percentage of hours per week spent in specific activities related to employment	Under 48 weeks per year: Number of active opticians	Under 48 weeks per year: Total	Under 48 weeks per year: Hours per week 1-34	Under 48 weeks per year: Hours per week 35 or more	48 to 52 weeks per year: Number of active opticians	48 to 52 weeks per year: Total	48 to 52 weeks per year: Hours per week 1-34	48 to 52 weeks per year: Hours per week 35-40	48 to 52 weeks per year: Hours per week 41-49	48 to 52 weeks per year: Hours per week 50-99
		Percent distribution				Percent distribution				
All active opticians	363	100.0	50.5	49.5	10,601	100.0	5.9	39.9	35.8	18.4
Shopwork:										
None	139	100.0	61.1	38.9	2,996	100.0	8.9	45.8	32.6	12.8
1-9 percent	30	100.0	38.3	61.7	869	100.0	4.1	40.2	38.5	17.1
10-39 percent	123	100.0	39.6	60.4	4,038	100.0	4.4	35.6	39.6	20.4
40-59 percent	53	100.0	53.6	46.4	1,639	100.0	4.9	36.9	34.9	23.3
60-99 percent	12	100.0	57.9	42.1	787	100.0	5.2	37.7	33.2	23.9
100 percent	6	100.0	48.1	51.9	273	100.0	7.7	61.4	20.4	10.6
Fitting and adjusting eyeglasses:										
None	32	100.0	58.5	41.5	971	100.0	6.8	50.8	24.9	17.5
1-9 percent	7	100.0	68.3	31.7	196	100.0	6.2	38.8	28.6	26.4
10-39 percent	54	100.0	50.0	50.0	1,644	100.0	7.1	33.9	33.7	25.3
40-59 percent	89	100.0	49.4	50.6	2,611	100.0	5.2	36.4	35.9	22.5
60-99 percent	119	100.0	41.1	58.9	4,199	100.0	4.2	39.8	40.5	15.5
100 percent	61	100.0	64.8	35.2	979	100.0	11.9	48.9	31.4	7.7
Fitting and adjusting contact lenses:										
None	295	100.0	55.7	44.3	7,729	100.0	6.3	42.0	34.8	16.8
1-9 percent	14	100.0	16.7	83.3	533	100.0	2.8	28.1	43.5	25.6
10-39 percent	32	100.0	19.6	80.4	1,633	100.0	4.8	32.9	38.0	24.3
40-59 percent	8	100.0	32.7	67.3	292	100.0	4.4	37.4	39.4	18.8
60-99 percent	9	100.0	50.1	49.9	329	100.0	4.3	43.4	34.5	17.8
100 percent	4	100.0	74.7	25.3	85	100.0	15.1	50.8	27.3	6.8
Administrative activites:										
None	232	100.0	52.5	47.5	5,977	100.0	6.3	43.6	34.2	15.9
1-9 percent	29	100.0	30.4	69.6	1,323	100.0	3.3	31.8	42.1	22.8
10-39 percent	75	100.0	46.8	53.2	2,931	100.0	5.1	34.6	37.9	22.4
40-59 percent	15	100.0	64.8	35.2	250	100.0	12.0	55.4	23.4	9.3
60-99 percent	10	100.0	74.8	25.2	102	100.0	18.7	39.1	22.0	20.2
100 percent	1	100.0	-	100.0	18	100.0	12.9	52.0	21.1	14.0
Opticianry research:										
None	272	100.0	53.8	46.2	7,619	100.0	6.6	43.4	35.0	15.0
1-9 percent	15	100.0	39.4	60.6	867	100.0	3.1	26.1	42.9	27.9
10-39 percent	51	100.0	35.5	64.5	1,684	100.0	4.4	30.6	38.0	26.9
40-59 percent	11	100.0	44.6	55.4	232	100.0	4.2	40.8	30.8	24.1
60-99 percent	10	100.0	45.3	54.7	153	100.0	7.2	39.0	24.0	29.8
100 percent	5	100.0	79.3	20.7	45	100.0	4.4	50.9	18.8	25.9
Teaching opticianry:										
None	336	100.0	51.7	48.3	9,783	100.0	5.8	40.9	35.8	17.5
1-9 percent	17	100.0	38.0	62.0	572	100.0	4.7	26.2	39.1	30.0
10-39 percent	8	100.0	24.4	75.6	237	100.0	12.8	28.7	27.6	30.9
40-59 percent	-	-	-	-	6	100.0	-	64.6	17.7	17.7
60-99 percent	-	-	-	-	2	100.0	-	-	100.0	-
100 percent	1	100.0	100.0	-	1	100.0	-	100.0	-	
Clerical activites:										
None	354	100.0	51.2	48.8	10,451	100.0	5.9	40.0	35.9	18.2
1-9 percent	1	100.0	-	100.0	81	100.0	-	32.8	24.8	42.4
10-39 percent	5	100.0	28.5	71.5	61	100.0	9.8	29.4	32.3	28.4
40-59 percent	-	-	-	-	3	100.0	-	60.2	-	39.8
60-99 percent	3	100.0	33.1	66.9	3	100.0	29.2	-	29.8	40.9
100 percent	-	-	-	-	2	100.0	-	100.0	-	-
Other types of activites:										
None	346	100.0	50.4	49.6	9,928	100.0	5.8	40.3	36.0	17.9
1-9 percent	2	100.0	100.0	-	176	100.0	4.1	28.0	35.9	32.0
10-39 percent	7	100.0	30.2	69.8	332	100.0	7.2	32.4	35.9	24.5
40-59 percent	2	100.0	-	100.0	66	100.0	19.3	37.2	23.5	20.0
60-99 percent	4	100.0	69.6	30.4	64	100.0	10.3	30.4	38.0	21.3
100 percent	2	100.0	100.0	-	35	100.0	-	68.2	9.4	22.4

Table 32. Number of active opticians, by primary form of employment and geographic location of employment: United States, 1969

Geographic location of employment	All active opticians	Primary form of employment		
		Self-employed	Salaried	Other
United States	10,963	3,392	7,415	156
Geographic region:				
Northeast	3,178	1,291	1,836	51
North Central	2,803	615	2,144	44
South	3,262	990	2,233	40
West	1,720	497	1,202	22
Geographic division:				
New England	786	354	419	13
Middle Atlantic	2,392	937	1,417	38
East North Central	1,805	400	1,372	32
West North Central	998	215	771	12
South Atlantic	1,727	572	1,135	20
East South Central	552	143	398	11
West South Central	983	275	700	8
Mountain	635	159	469	6
Pacific	1,086	337	733	16
State:				
Alabama	163	54	103	5
Alaska	14	6	8	-
Arizona	109	30	77	1
Arkansas	33	3	30	-
California	732	250	473	8
Colorado	256	45	208	3
Connecticut	199	83	111	4
Delaware	48	13	32	3
District of Columbia	138	33	103	2
Florida	434	188	244	3
Georgia	254	58	196	-
Hawaii	55	19	33	3
Idaho	21	5	16	-
Illinois	426	119	301	6
Indiana	212	38	170	4
Iowa	170	32	135	2
Kansas	99	31	67	1
Kentucky	159	28	128	3
Louisiana	152	51	98	2
Maine	10	7	3	-
Maryland	316	89	224	3
Massachusetts	473	205	260	8
Michigan	366	75	287	4
Minnesota	283	45	237	1
Mississippi	64	18	44	2

Table 32. Number of active opticians, by primary form of employment and geographic location of employment: United States, 1969–Con.

Geographic location of employment	All active opticians	Primary form of employment		
		Self-employed	Salaried	Other
State–Con.				
Missouri	277	74	198	5
Montana	53	17	34	1
Nebraska	113	26	84	3
Nevada	23	11	12	-
New Hampshire	30	11	18	1
New Jersey	337	175	158	4
New Mexico	48	23	25	-
New York	1,357	525	815	16
North Carolina	165	46	116	2
North Dakota	20	2	18	-
Ohio	566	135	418	13
Oklahoma	130	48	83	-
Oregon	106	27	77	2
Pennsylvania	698	237	444	17
Rhode Island	66	42	25	-
South Carolina	57	19	36	2
South Dakota	37	5	32	-
Tennessee	167	42	123	1
Texas	667	172	489	6
Utah	118	29	89	-
Vermont	8	6	2	-
Virginia	254	101	146	6
Washington	179	35	141	3
West Virginia	62	24	38	-
Wisconsin	235	33	197	5
Wyoming	8	-	8	-

Table 33. Number and percent distribution of active opticians by primary form of employment, according to geographic location of employment: United States, 1969

Geographic location of employment	Number of active opticians	Primary form of employment				Primary form of employment			
		Total	Self-employed	Salaried	Other	Total	Self-employed	Salaried	Other
		Percent distribution				Percent distribution			
United States	10,963	100.0	30.9	67.6	1.4	100.0	100.0	100.0	100.0
Geographic region:									
Northeast	3,178	100.0	40.6	57.8	1.6	29.0	38.1	24.8	32.6
North Central	2,803	100.0	21.9	76.5	1.6	25.6	18.1	28.9	28.1
South	3,262	100.0	30.3	68.4	1.2	29.8	29.2	30.1	25.4
West	1,720	100.0	28.9	69.9	1.3	15.7	14.6	16.2	13.9
Geographic division:									
New England	786	100.0	45.0	53.3	1.7	7.2	10.4	5.7	8.4
Middle Atlantic	2,392	100.0	39.2	59.3	1.6	21.8	27.6	19.1	24.2
East North Central	1,805	100.0	22.2	76.0	1.8	16.5	11.8	18.5	20.7
West North Central	998	100.0	21.5	77.3	1.2	9.1	6.3	10.4	7.4
South Atlantic	1,727	100.0	33.1	65.7	1.2	15.8	16.9	15.3	12.8
East South Central	552	100.0	25.9	72.1	2.0	5.0	4.2	5.4	7.2
West South Central	983	100.0	27.9	71.2	0.9	9.0	8.1	9.4	5.4
Mountain	635	100.0	25.1	73.9	1.0	5.8	4.7	6.3	4.0
Pacific	1,086	100.0	31.1	67.5	1.4	9.9	9.9	9.9	10.0
State:									
Alabama	163	100.0	33.3	63.3	3.3	1.5	1.6	1.4	3.5
Alaska	14	100.0	41.7	58.3	-	0.1	0.2	0.1	-
Arizona	109	100.0	27.6	71.1	1.3	1.0	0.9	1.0	0.9
Arkansas	33	100.0	10.0	90.0	-	0.3	0.1	0.4	-
California	732	100.0	34.2	64.7	1.2	6.7	7.4	6.4	5.4
Colorado	256	100.0	17.5	81.2	1.3	2.3	1.3	2.8	2.1
Connecticut	199	100.0	42.0	56.0	2.1	1.8	2.5	1.5	2.6
Delaware	48	100.0	26.5	67.6	5.9	0.4	0.4	0.4	1.8
District of Columbia	138	100.0	24.1	74.7	1.2	1.3	1.0	1.4	1.1
Florida	434	100.0	43.2	56.2	0.6	4.0	5.5	3.3	1.7
Georgia	254	100.0	22.8	77.2	-	2.3	1.7	2.6	-
Hawaii	55	100.0	35.1	59.5	5.4	0.5	0.6	0.4	1.9
Idaho	21	100.0	23.8	76.2	-	0.2	0.1	0.2	-
Illinois	426	100.0	27.9	70.7	1.4	3.9	3.5	4.1	3.8
Indiana	212	100.0	18.1	80.0	1.9	1.9	1.1	2.3	2.6
Iowa	170	100.0	19.0	79.8	1.2	1.5	1.0	1.8	1.3
Kansas	99	100.0	31.3	67.7	1.0	0.9	0.9	0.9	0.6
Kentucky	159	100.0	17.6	80.5	1.9	1.5	0.8	1.7	1.9
Louisiana	152	100.0	33.8	64.6	1.5	1.4	1.5	1.3	1.5
Maine	10	100.0	70.0	30.0	-	0.1	0.2	-	-

Table 33. Number and percent distribution of active opticians by primary form of employment, according to geographic location of employment: United States, 1969—Con.

Geographic location of employment	Number of active opticians	Primary form of employment				Primary form of employment			
		Total	Self-employed	Salaried	Other	Total	Self-employed	Salaried	Other
		Percent distribution				Percent distribution			
State—Con.									
Maryland	316	100.0	28.3	70.8	0.9	2.9	2.6	3.0	1.9
Massachusetts	473	100.0	43.3	55.0	1.7	4.3	6.0	3.5	5.1
Michigan	366	100.0	20.5	78.3	1.2	3.3	2.2	3.9	2.8
Minnesota	283	100.0	15.8	83.7	0.5	2.6	1.3	3.2	0.9
Mississippi	64	100.0	28.9	68.4	2.6	0.6	0.5	0.6	1.1
Missouri	277	100.0	26.9	71.4	1.6	2.5	2.2	2.7	2.9
Montana	53	100.0	32.4	64.9	2.7	0.5	0.5	0.5	0.9
Nebraska	113	100.0	22.7	75.0	2.3	1.0	0.8	1.1	1.6
Nevada	23	100.0	47.8	52.2	-	0.2	0.3	0.2	-
New Hampshire	30	100.0	36.7	60.0	3.3	0.3	0.3	0.2	0.6
New Jersey	337	100.0	51.9	46.9	1.2	3.1	5.2	2.1	2.7
New Mexico	48	100.0	47.5	52.5	-	0.4	0.7	0.3	-
New York	1,357	100.0	38.7	60.1	1.2	12.4	15.5	11.0	10.4
North Carolina	165	100.0	28.2	70.6	1.2	1.5	1.4	1.6	1.3
North Dakota	20	100.0	10.0	90.0	-	0.2	0.1	0.2	-
Ohio	566	100.0	23.8	74.0	2.2	5.2	4.0	5.6	8.0
Oklahoma	130	100.0	36.6	63.4	-	1.2	1.4	1.1	-
Oregon	106	100.0	25.4	73.0	1.6	1.0	0.8	1.0	1.1
Pennsylvania	698	100.0	33.9	63.6	2.5	6.4	7.0	6.0	11.1
Rhode Island	66	100.0	62.9	37.1	-	0.6	1.2	0.3	-
South Carolina	57	100.0	33.3	63.2	3.5	0.5	0.6	0.5	1.3
South Dakota	37	100.0	12.5	87.5	-	0.3	0.1	0.4	-
Tennessee	167	100.0	25.3	74.0	0.7	1.5	1.2	1.7	0.7
Texas	667	100.0	25.8	73.3	0.9	6.1	5.1	6.6	3.9
Utah	118	100.0	24.3	75.7	-	1.1	0.8	1.2	-
Vermont	8	100.0	71.4	28.6	-	0.1	0.2	0.0	-
Virginia	254	100.0	40.0	57.7	2.3	2.3	3.0	2.0	3.8
Washington	179	100.0	19.6	79.0	1.4	1.6	1.0	1.9	1.6
West Virginia	62	100.0	39.3	60.7	-	0.6	0.7	0.5	-
Wisconsin	235	100.0	14.0	83.7	2.3	2.1	1.0	2.7	3.5
Wyoming	8	100.0	-	100.0	-	0.1	-	0.1	-

Table 34. Number of active opticians, by primary form of employment and selected characteristics: United States, 1969

Characteristic	All active opticians	Primary form of employment		
		Self-employed	Salaried	Other
All active opticians	10,963	3,392	7,415	156
Sex:				
Male	9,709	3,194	6,389	126
Female	1,254	198	1,026	30
Age:				
Under 25 years	683	25	654	4
25-34 years	2,093	298	1,778	16
35-44 years	2,579	754	1,776	49
45-54 years	3,449	1,344	2,054	51
55-64 years	1,582	685	869	28
65 years and over	578	286	284	9
Self-classification of specialties:				
Dispensing optician only	3,849	1,118	2,672	59
Dispensing optician, optical mechanic	2,962	901	2,025	35
Dispensing optician, contact lens technician	894	339	545	11
Dispensing optician, optical mechanic, and contact lens technician	1,289	574	701	14
Dispensing optician and all other specialties	1,337	360	950	27
Nondispensing optician	632	99	522	11
Principal place of employment:				
Retail opticial establishment	7,614	2,887	4,629	99
Optometrist, ophthalmologist, or other physician	1,021	117	886	18
Ophthalmic goods wholesaler	595	161	418	16
Hospital or clinic	575	27	548	-
Department store optical department	386	41	339	5
Other	772	158	595	19
Training in opticianry:				
On the job	6,778	1,966	4,703	108
Registered apprentice	500	187	306	6
Other	547	233	304	10
On the job, registered apprentice	739	204	528	7
On the job, other	1,483	521	941	22
Registered apprentice, other	127	44	82	1
On the job, registered apprentice, other	354	116	237	2
No training at place of employment	436	121	314	1

Table 35. Number and percent distribution of active opticians by primary form of employment, according to selected characteristics: United States, 1969

Characteristic	Number of active opticians	Total	Primary form of employment			Total	Primary form of employment		
			Self-employed	Salaried	Other		Self-employed	Salaried	Other
						Number			
All active opticians						10,963	3,392	7,415	156
		Percent distribution				Percent distribution			
Total	10,963	100.0	30.9	67.6	1.4	100.0	100.0	100.0	100.0
Sex:									
Male	9,709	100.0	32.9	65.8	1.3	88.6	94.2	86.2	80.6
Female	1,254	100.0	15.8	81.8	2.4	11.4	5.8	13.8	19.4
Age:									
Under 25 years	683	100.0	3.7	95.8	0.6	6.2	0.7	8.8	2.6
25-34 years	2,093	100.0	14.3	85.0	0.8	19.1	8.8	24.0	10.4
35-44 years	2,579	100.0	29.2	68.9	1.9	23.5	22.2	23.9	31.3
45-54 years	3,449	100.0	39.0	59.6	1.5	31.5	39.6	27.7	32.5
55-64 years	1,582	100.0	43.3	55.0	1.8	14.4	20.2	11.7	17.7
65 years and over	578	100.0	49.4	49.1	1.5	5.3	8.4	3.8	5.5
Self-classification of specialties:									
Dispensing optician only	3,849	100.0	29.1	69.4	1.5	35.1	33.0	36.0	37.7
Dispensing optician, optical mechanic	2,962	100.0	30.4	68.4	1.2	27.0	26.6	27.3	22.3
Dispensing optician, contact lens technician	894	100.0	37.9	60.9	1.2	8.2	10.0	7.3	6.8
Dispensing optician, optical mechanic, and contact lens technician	1,289	100.0	44.5	54.4	1.1	11.8	16.9	9.5	8.9
Dispensing optician and all other specialties	1,337	100.0	26.9	71.0	2.0	12.2	10.6	12.8	17.5
Nondispensing optician	632	100.0	15.7	82.6	1.7	5.8	2.9	7.0	6.8
Principal place of employment:									
Retail optical establishment	7,614	100.0	37.9	60.8	1.3	69.5	85.1	62.4	63.2
Optometrist, ophthalmologist, or other physician	1,021	100.0	11.4	86.9	1.7	9.3	3.4	12.0	11.2
Ophthalmic goods wholesaler	595	100.0	27.1	70.2	2.7	5.4	4.8	5.6	10.4
Hospital or clinic	575	100.0	4.8	95.2	-	5.2	0.8	7.4	-
Department store optical department	386	100.0	10.7	87.9	1.4	3.5	1.2	4.6	3.4
Other	772	100.0	20.5	77.1	2.4	7.0	4.7	8.0	11.8
Training in opticianry:									
On the job	6,778	100.0	29.0	69.4	1.6	61.8	58.0	63.4	69.3
Registered apprentice	500	100.0	37.5	61.3	1.2	4.6	5.5	4.1	3.9
Other	547	100.0	42.6	55.7	1.7	5.0	6.9	4.1	6.1
On the job, registered apprentice	739	100.0	27.6	71.5	0.9	6.7	6.0	7.1	4.4
On the job, other	1,483	100.0	35.1	63.4	1.5	13.5	15.3	12.7	14.0
Registered apprentice, other	127	100.0	34.7	64.5	0.8	1.2	1.3	1.1	0.6
On the job, registered apprentice, other	354	100.0	32.7	66.8	0.5	3.2	3.4	3.2	1.1
No training at place of employment	436	100.0	27.8	71.9	0.2	4.0	3.6	4.2	0.6

Table 36. Number of active opticians, by primary form of employment and selected characteristics: United States, 1969

Characteristic	All active opticians	Primary form of employment		
		Self-employed	Salaried	Other
All active opticians	10,963	3,392	7,415	156
Years in opticianry:				
1-4 years	1,087	60	1,011	17
5-9 years	1,423	218	1,187	18
10-19 years	2,407	621	1,749	36
20-29 years	3,100	1,113	1,939	47
30-39 years	1,980	922	1,038	20
40 years and over	967	458	491	18
Weeks per year and hours per week worked:				
Under 48 weeks:				
1-34 hours	183	84	86	13
35 or more hours	179	89	87	3
48-52 weeks:				
1-34 hours	623	243	363	17
35-40 hours	4,228	787	3,395	46
41-49 hours	3,796	1,090	2,664	42
50 or more hours	1,953	1,098	819	36
Years of schooling:				
High school:				
1 year or less	587	190	382	15
2 years	536	169	358	9
3 years	588	165	411	12
4 years	5,120	1,375	3,684	61
College:				
1 year	1,241	386	834	21
2 years	1,659	545	1,096	19
3 years	454	173	274	7
4 years	576	270	296	10
5 years or more	203	119	82	2
School of opticianry attended:				
None	9,974	3,125	6,695	154
Erie County Technical Institute	331	88	243	-
Ferris State College	29	7	22	-
Los Angeles City College	104	28	75	1
New York City Community College	83	25	59	-
Eveleth Area Vocational-Technical School	4	-	4	-
Military schools of opticianry	438	120	318	1

Table 37. Number and percent distribution of active opticians by primary form of employment, according to selected characteristics: United States, 1969

Characteristic	Number of active opticians	Total	Primary form of employment			Total	Primary form of employment		
			Self-employed	Salaried	Other		Self-employed	Salaried	Other
						Number			
All active opticians . .						10,963	3,392	7,415	156
		Percent distribution				Percent distribution			
Total	10,963	100.0	30.9	67.6	1.4	100.0	100.0	100.0	100.0
Years in opticianry:									
1-4 years	1,087	100.0	5.5	92.9	1.5	9.9	1.8	13.6	10.6
5-9 years	1,423	100.0	15.3	83.4	1.3	13.0	6.4	16.0	11.4
10-19 years	2,407	100.0	25.8	72.7	1.5	22.0	18.3	23.6	23.1
20-29 years	3,100	100.0	35.9	62.6	1.5	28.3	32.8	26.2	30.3
30-39 years	1,980	100.0	46.6	52.4	1.0	18.1	27.2	14.0	12.9
40 years and over	967	100.0	47.4	50.8	1.9	8.8	13.5	6.6	11.6
Weeks per year and hours per week worked:									
Under 48 weeks:									
1-34 hours	183	100.0	46.1	46.9	7.0	1.7	2.5	1.2	8.2
35 or more hours	179	100.0	49.5	48.8	1.7	1.6	2.6	1.2	1.9
48-52 weeks:									
1-34 hours	623	100.0	39.0	58.3	2.7	5.7	7.2	4.9	10.7
35-40 hours	4,228	100.0	18.6	80.3	1.1	38.6	23.2	45.8	29.5
41-49 hours	3,796	100.0	28.7	70.2	1.1	34.6	32.1	35.9	26.6
50 hours or more	1,953	100.0	56.2	41.9	1.9	17.8	32.4	11.0	23.1
Years of schooling:									
High school:									
1 year or less	587	100.0	32.4	65.0	2.6	5.4	5.6	5.1	9.7
2 years	536	100.0	31.6	66.8	1.7	4.9	5.0	4.8	5.7
3 years	588	100.0	28.1	69.9	2.0	5.4	4.9	5.5	7.6
4 years	5,120	100.0	26.9	72.0	1.2	46.7	40.5	49.7	39.0
College:									
1 year	1,241	100.0	31.1	67.2	1.7	11.3	11.4	11.2	13.2
2 years	1,659	100.0	32.8	66.0	1.1	15.1	16.1	14.8	11.9
3 years	454	100.0	38.0	60.3	1.6	4.1	5.1	3.7	4.8
4 years	576	100.0	46.9	51.3	1.8	5.3	8.0	4.0	6.6
5 years or more	203	100.0	58.6	40.2	1.2	1.8	3.5	1.1	1.5
School of opticianry attended:									
None	9,974	100.0	31.3	67.1	1.5	91.0	92.1	90.3	98.5
Erie County Technical Institute	331	100.0	26.7	73.3	-	3.0	2.6	3.3	-
Ferris State College	29	100.0	22.7	77.3	-	0.3	0.2	0.3	-
Los Angeles City College	104	100.0	26.7	72.0	1.3	0.9	0.8	1.0	0.9
New York City Community College	83	100.0	29.7	70.3	-	0.8	0.7	0.8	-
Eveleth Area Vocational-Technical School	4	100.0	-	100.0	-	-	-	0.1	-
Military schools of opticianry	438	100.0	27.3	72.5	0.2	4.0	3.5	4.3	0.6

Table 38. Number of active opticians, by primary form of employment and percentage of hours per week spent in specific activities related to employment: United States, 1969

Percentage of hours per week spent in specific activities related to employment	All active opticians	Primary form of employment		
		Self-employed	Salaried	Other
All active opticians	10,963	3,392	7,415	156
Shopwork:				
None	3,135	807	2,276	53
1-9 percent	899	237	645	17
10-39 percent	4,161	1,428	2,672	62
40-59 percent	1,692	668	1,012	12
60-99 percent	798	215	578	6
100 percent	278	38	233	7
Fitting and adjusting eyeglasses:				
None	1,003	270	713	20
1-9 percent	203	65	134	4
10-39 percent	1,699	667	995	36
40-59 percent	2,700	1,017	1,647	37
60-99 percent	4,318	1,175	3,096	47
100 percent	1,040	198	830	12
Fitting and adjusting contact lenses:				
None	8,025	2,297	5,607	121
1-9 percent	546	198	341	8
10-39 percent	1,665	631	1,013	21
40-59 percent	300	104	192	4
60-99 percent	338	136	201	1
100 percent	89	26	61	2
Administrative activities:				
None	6,210	1,670	4,451	89
1-9 percent	1,352	491	843	18
10-39 percent	3,006	1,141	1,826	39
40-59 percent	265	48	213	5
60-99 percent	112	34	72	6
100 percent	19	7	11	-
Opticianry research:				
None	7,891	2,036	5,771	84
1-9 percent	881	386	483	13
10-39 percent	1,735	799	904	32
40-59 percent	243	94	133	16
60-99 percent	163	59	96	9
100 percent	50	19	30	2
Teaching opticianry:				
None	10,119	3,025	6,954	140
1-9 percent	589	253	324	13
10-39 percent	246	110	132	3
40-59 percent	6	2	4	-
60-99 percent	2	2	-	-
100 percent	2	1	1	-
Clerical activities:				
None	10,804	3,330	7,320	155
1-9 percent	82	32	48	1
10-39 percent	66	28	38	-
40-59 percent	3	1	2	-
60-99 percent	6	1	5	-
100 percent	2	-	2	-
Other types of activites:				
None	10,274	3,167	6,976	130
1-9 percent	178	72	100	7
10-39 percent	338	99	228	12
40-59 percent	68	31	34	3
60-99 percent	68	18	46	4
100 percent	37	6	31	-

Table 39. Number and percent distribution of active opticians by primary form of employment, according to percentage of hours per week spent in specific activities related to employment: United States, 1969

Percentage of hours per week spent in specific activities related to employment	Number of active opticians	Total	Primary form of employment			Total	Primary form of employment		
			Self-employed	Salaried	Other		Self-employed	Salaried	Other
						Number			
						10,963	3,392	7,415	156
		Percent distribution				Percent distribution			
All active opticians	10,963	100.0	30.9	67.6	1.4	100.0	100.0	100.0	100.0
Shopwork:									
None	3,135	100.0	25.7	72.6	1.7	28.6	23.8	30.7	33.6
1-9 percent	899	100.0	26.4	71.7	1.9	8.2	7.0	8.7	11.0
10-39 percent	4,161	100.0	34.3	64.2	1.5	38.0	42.1	36.0	39.4
40-59 percent	1,692	100.0	39.5	59.8	0.7	15.4	19.7	13.6	7.9
60-99 percent	798	100.0	26.9	72.4	0.7	7.3	6.3	7.8	3.7
100 percent	278	100.0	13.7	83.8	2.5	2.5	1.1	3.1	4.5
Fitting and adjusting eyeglasses:									
None	1,003	100.0	26.9	71.1	2.0	9.2	8.0	9.6	12.8
1-9 percent	203	100.0	31.8	66.0	2.1	1.9	1.9	1.8	2.8
10-39 percent	1,699	100.0	39.3	58.6	2.1	15.5	19.7	13.4	22.9
40-59 percent	2,700	100.0	37.7	61.0	1.4	24.6	30.0	22.2	23.4
60-99 percent	4,318	100.0	27.2	71.7	1.1	39.4	34.6	41.8	30.4
100 percent	1,040	100.0	19.1	79.8	1.2	9.5	5.8	11.2	7.8
Fitting and adjusting contact lenses:									
None	8,024	100.0	28.6	70.0	1.5	73.2	67.7	75.6	77.1
1-9 percent	546	100.0	36.2	62.4	1.5	5.0	5.8	4.6	5.1
10-39 percent	1,665	100.0	37.9	60.8	1.3	15.2	18.6	13.7	13.3
40-59 percent	300	100.0	34.7	63.9	1.4	2.7	3.1	2.6	2.6
60-99 percent	338	100.0	40.1	59.5	0.4	3.1	4.0	2.7	0.9
100 percent	89	100.0	29.6	68.7	1.7	0.8	0.8	0.8	1.0
Administrative activities:									
None	6,210	100.0	26.9	71.7	1.4	56.6	49.2	60.0	56.7
1-9 percent	1,352	100.0	36.3	62.4	1.3	12.3	14.5	11.4	11.3
10-39 percent	3,006	100.0	38.0	60.7	1.3	27.4	33.7	24.6	24.9
40-59 percent	265	100.0	18.0	80.2	1.8	2.4	1.4	2.9	3.1
60-99 percent	112	100.0	30.4	63.9	5.7	1.0	1.0	1.0	4.1
100 percent	19	100.0	40.0	60.0	-	0.2	0.2	0.2	-
Opticianry research:									
None	7,891	100.0	25.8	73.1	1.1	72.0	60.0	77.8	53.6
1-9 percent	881	100.0	43.8	54.8	1.5	8.0	11.4	6.5	8.3
10-39 percent	1,735	100.0	46.0	52.1	1.9	15.8	23.6	12.2	20.8
40-59 percent	243	100.0	38.8	54.7	6.5	2.2	2.8	1.8	10.1
60-99 percent	163	100.0	36.1	58.3	5.6	1.5	1.7	1.3	5.8
100 percent	50	100.0	37.2	58.8	4.1	0.5	0.6	0.4	1.3
Teaching opticianry:									
None	10,119	100.0	29.9	68.7	1.4	92.3	89.2	93.8	89.8
1-9 percent	589	100.0	42.9	54.9	2.1	5.4	7.5	4.4	8.0
10-39 percent	246	100.0	44.7	53.9	1.4	2.2	3.2	1.8	2.2
40-59 percent	6	100.0	35.4	64.6	-	0.1	0.1	0.1	-
60-99 percent	2	100.0	100.0	-	-	0.0	0.0	-	-
100 percent	2	100.0	50.0	50.0	-	0.0	0.0	0.0	-
Clerical activities:									
None	10,804	100.0	30.8	67.7	1.4	98.6	98.2	98.7	99.1
1-9 percent	82	100.0	39.5	58.9	1.6	0.8	1.0	0.7	0.9
10-39 percent	66	100.0	42.1	57.9	-	0.6	0.8	0.5	-
40-59 percent	3	100.0	39.8	60.2	-	0.0	0.0	0.0	-
60-99 percent	6	100.0	15.5	84.5	-	0.1	0.0	0.1	-
100 percent	2	100.0	-	100.0	-	0.0	-	0.0	-
Other types of activites:									
None	10,274	100.0	30.8	67.9	1.3	93.7	93.4	94.1	83.5
1-9 percent	178	100.0	40.2	55.9	3.9	1.6	2.1	1.3	4.4
10-39 percent	338	100.0	29.2	67.3	3.5	3.1	2.9	3.1	7.6
40-59 percent	68	100.0	44.9	50.1	4.9	0.6	0.9	0.5	2.2
60-99 percent	68	100.0	26.8	67.8	5.4	0.6	0.5	0.6	2.4
100 percent	37	100.0	15.7	84.3	-	0.3	0.2	0.4	-

APPENDIX I

TECHNICAL NOTES ON METHODS

Background

The survey of opticianry manpower was designed to obtain information about the characteristics of all dispensing opticians and optical mechanics engaged in providing direct health care to the general public. Coverage included opticians in all 50 States and the District of Columbia. Excluded from this survey were the sizable number of opticians engaged in manufacturing and industry who were not providing health care to the public.

No previous study of opticians had been attempted on the national level. As a consequence, one of the most difficult tasks was to establish a mailing list of the names and addresses of opticians. Two methods were employed to maximize the completeness of this list: Conducting a survey of opticianry establishments and obtaining lists from independent sources.

In 1968, a survey was made of all known opticianry establishments. Primary among the aims of that survey was to secure the names and addresses of all dispensing opticians and optical mechanics employed in those establishments (including owners).

No discussion of the methods used in the establishment survey will be undertaken in this report except when it is necessary for clarification of the procedures used in the manpower survey.

Exclusive reliance was not placed on the list of opticians obtained from the establishment survey. The completeness of the list of establishments could not be guaranteed despite efforts to maximize its completeness. Additional sources were used to supplement the list of opticians obtained from the establishment survey.

The opticianry establishment survey provided 8,880 usable names and addresses of active opticians. Supplementary sources, such as State licensing agencies, State associations, the Guild of Prescription Opticians, and others, provided additional names and addresses. The elimination of duplicated names and addresses from the multiple sources provided a new total of 14,406. (Subsequent returns from the opticians' survey indicated that not all of the duplicates were removed during the earlier processing.) To this number was mailed the opticianry manpower questionnaire reproduced in appendix III.

Data Collection and Processing

The collection of data for this survey was done under contract with the U.S. Bureau of the Census. They were responsible for mailing the questionnaires, receipt and control of responses, and the followup procedures used whenever incomplete or inadequate questionnaires were returned or whenever a questionnaire was not returned.

Three mailings were used in an attempt to elicit a response. The first two were sent by first-class mail and the third was sent by certified mail. All three mailings were made for all cases in which a return was not received.

In addition to the mailings, two additional procedures were used—telephone calls and personal interviews. These additional procedures were employed for such cases as partially completed questionnaires and for nonresponses or refusals.

The survey began in February 1969 and was completed 4 months later.

A preliminary edit was undertaken at the time of the return of the questionnaire. This procedure was done to insure completeness of the responses. Data from the questionnaires were then coded, punched, and put on computer tape.

An elaborate series of checks was made during the cleanup and editing phase of the procedures. Several hundred cross-checks were made between related items on the individual records to insure consistency between related items, insure the accuracy of the answers, and to correct coding and punching errors that occurred.

Response to the Survey

The total mailing list for this survey was 14,406. A sizable number of these proved to be out of scope for the purposes of the survey. They amounted to 3,180 (22.1 percent) of the original list. These were primarily persons whose names appeared more than once on the list, persons whom we were informed were deceased, and military personnel. The elimination of this group from the total provided a new usable number of 11,226.

A total of 9,114, or 81.2 percent of the 11,226, responded to the survey with usable questionnaires. The balance was a combination of 1,137 nonrespondents (i.e., no questionnaires returned) and 975 postmaster returns, or 10.1 and 8.7 percent, respectively.

In the case of the 975 returned by the Post Office, it was obvious that the addressee could not be located. Undoubtedly, some of these were deceased but not known to be deceased by [illegible] Post Office. Failures in other cases were probably due to out-of-date addresses. Suffice it to say, this group of questionnaires could not be delivered to the addressees.

Nonresponses are not as easy to explain or understand. In some cases, the addressees may not have received the questionnaires. They may have moved or died, and no one at the address returned the questionnaires. In other cases, they may have been inactive (i.e., nonactive or retired) and did not bother to answer. Some evidence exists that this was probably true. To what extent, however, is unknown. Finally, there were assuredly some who simply would not bother or refused to participate in any way.

Of the more than 9,000 good responses, 91.7 percent were from active opticians. The balance were from nonactive and retired persons.

Item Responses

A response to the survey does not necessarily insure adequate answers to all of the questions on the questionnaire. In fact, a response to only a single question is taken as a response to the survey. The previous discussion concerned responses to the survey. These are called unit responses. In this section we will discuss responses to individual questions on the questionnaire; i.e., item responses. This discussion will be concerned only with the 9,114 unit respondents to the survey because the interest is in the variability of responses to different questions. Table I presents a distribution of the responses

Table I. Number and percent distribution of respondents to individual questions on the questionnaire by question number and content, according to activity status: United States, 1969

Question number and content	Active optician respondents	Inactive and retired optician respondents
	Number	
All respondents	8,361	753
	Percent distribution	
Total	100.0	100.0
2. Year of birth	99.5	84.7
3. Where born	99.0	83.8
4. Citizen of the United States	99.5	83.9
5. Sex	99.0	83.7
6. Education (general)	98.7	79.8
7. Education and/or training in opticianry	84.8	53.8
8. Number of years in opticianry	97.9	68.9
9. Consider self	99.7	76.2
10. Activity status	100.0	100.0
11. Principal place of employment	98.9	...
12. Primary form of employment	98.8	...
13. Number of locations	97.9	...
14. Weeks per year usually worked	97.6	...
15. Hours per week usually worked	96.6	...
16. Percentage of time spent in specific activities	95.5	...

to individual questions on the questionnaire. Data are provided for both active and inactive respondents. The examination of these data are highly informative from a methodological point of view.

Among both active and inactive respondents, the fewest responses were obtained for question 7 which asked for a breakdown, with dates, of the education and training received in opticianry. Possibly because of confusion as to what constituted the different types of training at the place of employment or the dates of the various events, answers were omitted. There can be little doubt that this question proved to be the most troublesome to the respondents.

Among the active opticians (ignoring question 7) there was a deterioration in responses as the respondents progressed through the questionnaire. Nonresponses for the first few questions were less than 1 percent. Nonresponses to questions at the end of the questionnaire increased to 4 and 5 percent. This would appear to indicate that the amount of response is to some extent inversely related to the length of the questionnaire.

One can hardly avoid noticing the differences in the levels of responses between the active and inactive opticians. Active respondents answered every question to a greater degree than inactive opticians answered any question.

One of the principal reasons for not presenting statistics on the inactive opticians was the poor responses received. Responses from inactive opticians were, at a minimum, 15 percentage points smaller than those from active opticians for every question. On two questions (7 and 8) there were approximately 30 percentage points separating the two groups.

Earlier in the discussion, reference was made to the belief that there was evidence to indicate that at least some of the nonresponses to the survey were attributable to nonactive and retired opticians. This was based on the large differences in the responses to individual questions by active and inactive opticians. When inactive opticians respond to the survey and between 15 and 46 percent fail to answer each question, it is probable that a substantial number of the inactive opticians simply did not respond to the survey in any manner.

Imputation for Unknowns

As a matter of policy, tables in this publication are presented with item nonresponses imputed. The allocation of the item nonresponses was done by computer utilizing two principles: first, random assignment; and second, utilization of related information as category controls to insure consistency among different related items within the same record.

Assignment of values to replace item nonresponse is done on a random basis to prevent bias. The value used to replace an item nonresponse is randomly selected from within a range of values prescribed by related information from the record containing the item nonresponse. Establishment of a range of values is necessary to insure that the value used to replace the item nonresponse will not be inconsistent with other values within the record in which the value is being placed.

An example may clarify the procedures. Mr. Blank is 48 years of age. His year at graduation is not known. It must be imputed. Age and year at graduation are related items. In this case, Mr. Blank's age will be used as a category control to choose an appropriate record from which a year at graduation will be selected. By means of a random selection process, Mr. Given's record is chosen because his age was 49. (The age category in this case could have been 48-50.) Thus, Mr. Blank's and Mr. Given's ages were both in the same category. Mr. Given's year at graduation was listed as 1942. The year 1942 is then copied into Mr. Blank's record as his year at graduation and will be counted in all tabulations as if it were the actual year Mr. Blank had provided on his questionnaire.

State and National Estimates

Surveys are seldom conducted from which 100 percent response is received. This survey was no exception. As a consequence a dilemma exists: Should only responses be reported or should the nonrespondents be taken into account and some provision made for the data that were not collected from them? In this publication the latter choice was made despite the problems which such a choice involves.

No one knows precisely how many active opticians there are in the United States. Even after this survey, or others like it, only an approximation of the actual number can be made. The discussion that follows provides the methodology used to arrive at 10,963 as the best estimate we could make of the number of active opticians in the United States.

The starting point for the estimate was the survey of opticianry establishments conducted in 1968. From this survey was obtained the number of opticians within each State on the basis of the respondents to the survey. Within each State, the average number of opticians per establishment was multiplied by the number of in-scope nonresponding establishments to obtain the increment needed to adjust for nonresponses. The increment plus the numbers obtained from respondents provided the number of active opticians.

Normally there would not be any need to go further. In this case, however, account had to be taken of the additional sources from which names and addresses of opticians were obtained. Thus additional procedures were instituted.

For any State in which the responses to the manpower survey exceeded the inflated number obtained from the establishment survey, the number from the establishment survey was raised to include the difference. This added step had the effect of raising the total number of opticians by 178.

The figures from the establishment survey along with the added 178 became the basis for inflating the manpower survey results for active opticians.

In effect, cognizance was taken of the respondents and nonrespondents from the opticianry establishment survey as well as the respondents to the opticianry manpower survey in estimating that the total number of active opticians working in the health field in 1969 was 10,963. Table II presents the numbers of respondents to the manpower survey, the inflation factors, and the inflated number of active opticians for each State.

Table II. Inflation of active opticians in the health field, by State: United States, 1969

State	Responding active opticians	Inflation factor	Weighted number of opticians
Total[1]	8,361	1.31	10,963
Alabama	90	1.81	163
Alaska	12	1.17	14
Arizona	76	1.43	109
Arkansas	20	1.65	33
California	433	1.69	732
Colorado	154	1.66	256
Connecticut	193	1.03	199
Delaware	34	1.41	48
District of Columbia	83	1.66	138
Florida	324	1.34	434
Georgia	184	1.38	254
Hawaii	37	1.49	55
Idaho	21	1.00	21
Illinois	215	1.98	426
Indiana	155	1.37	212
Iowa	84	2.02	170
Kansas	99	1.00	99
Kentucky	159	1.00	159
Louisiana	130	1.17	152
Maine	10	1.00	10
Maryland	212	1.49	316
Massachusetts	473	1.00	473
Michigan	336	1.09	366
Minnesota	202	1.40	283
Mississippi	38	1.68	64
Missouri	182	1.52	277
Montana	37	1.43	53
Nebraska	88	1.28	113
Nevada	23	1.00	23
New Hampshire	30	1.00	30
New Jersey	241	1.40	337
New Mexico	40	1.20	48
New York	1,330	1.02	1,357
North Carolina	163	1.01	165
North Dakota	20	1.00	20
Ohio	407	1.39	566
Oklahoma	93	1.40	130
Oregon	63	1.68	106
Pennsylvania	525	1.33	698
Rhode Island	35	1.89	66
South Carolina	57	1.00	57
South Dakota	24	1.54	37
Tennessee	150	1.11	167
Texas	442	1.51	667
Utah	74	1.59	118
Vermont	7	1.14	8
Virginia	215	1.18	254
Washington	143	1.25	179
West Virginia	61	1.02	62
Wisconsin	129	1.82	235
Wyoming	8	1.00	8

[1] Summation of column frequencies may not agree due to rounding.

APPENDIX II

DEFINITIONS OF CERTAIN TERMS USED IN THIS REPORT

Terms Relating to Opticianry

Dispensing optician and optical mechanics (optical technicians).—Make, fit, supply, and adjust eyeglasses prescribed by eye physicians (ophthalmologist or oculist) and optometrists to correct defective vision. Optical technicians grind and polish lenses to specifications of prescriptions and assemble lenses and frames. Dispensing opticians then fit and adjust the finished glasses to the customer's facial features. In some States, dispensing opticians also fit contact lenses.

Optician.—The use of this term includes both dispensing opticians and optical mechanics (optical technicians).

Active.—Active opticians are trained and engaged, at least part time, in the practice of opticianry.

Nonactive.—Nonactive opticians are trained but are not engaged in opticianry in any way. They may now be working in some other occupation.

Retired.—Retired opticians were formerly active in opticianry but are presently retired and no longer practice nor engage in opticianry.

Inactive.—Inactive opticians include both the nonactive and retired opticians.

Demographic Terms

Age.—Refers to the respondents' ages in 1969. In all cases it is calculated as the difference between 1969 and the respondent's year of birth.

Geographic region and division.—The regions and divisions of the United States are as follows:

Region and division	*States included*
Northeast	
New England . .	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut
Middle Atlantic	New York, New Jersey, Pennsylvania
North Central	
East North Central	Ohio, Indiana, Illinois, Michigan, Wisconsin
West North Central	Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas
South	
South Atlantic .	Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida
East South Central	Kentucky, Tennessee, Alabama, Mississippi
West South Central	Arkansas, Louisiana, Oklahoma, Texas
West	
Mountain	Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada
Pacific	Washington, Oregon, California, Alaska, Hawaii

United States.—The 50 States and the District of Columbia.

APPENDIX III SURVEY FORMS AND QUESTIONNAIRE

(41)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
WASHINGTON, D.C. 20201

NATIONAL CENTER FOR
HEALTH STATISTICS

February 12, 1969

Dear Sir:

The National Center for Health Statistics is conducting a manpower survey of all dispensing opticians and contact lens technicians in the United States. Comparable manpower surveys of ophthalmologists and optometrists are also under way.

Completing and returning the enclosed questionnaire should require only a few minutes of your time.

If you work at several locations, you may receive more than one questionnaire. Answer one questionnaire completely, and answer only the first question of the others. Please return each questionnaire you receive.

The survey will result in published statistics that will be of great benefit to opticianry in planning educational programs, research projects, and improving the delivery of vision and eye care.

The Bureau of the Census is acting as the collecting agent for us on this survey.

Thank you very much for your cooperation.

Sincerely yours,

Siegfried A. Hoermann
Director, Division of Health Resources
Statistics

STATEMENT OF CONFIDENTIALITY:
All information which permits the identification of the individual will be held strictly confidential, will be used solely by persons engaged in, and only for the purposes of the survey, and will not be disclosed or released to other persons or for any other purpose.

(42)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
WASHINGTON, D.C. 20201

NATIONAL CENTER FOR
HEALTH STATISTICS

March 10, 1969

Dear Sir:

A short time ago we sent you a questionnaire pertaining to the survey of opticianry manpower being conducted by the National Center for Health Statistics.

If you work at several locations, you may have received more than one questionnaire. Please return a questionnaire for each location at which you work. Answer one questionnaire completely, and answer only the first question of the others. If you have already returned the questionnaire(s), please accept our thanks for your help.

If you have not yet returned your questionnaire you can make a valuable contribution to your profession by doing so. A duplicate questionnaire is enclosed for your convenience.

Completing and returning the questionnaire should require only a few minutes of your time.

The Bureau of the Census is acting as the collecting agent for us on this survey.

Thank you very much for your cooperation.

Sincerely yours,

Siegfried A Hoermann

Siegfried A. Hoermann
Director, Division of Health Resources
Statistics

STATEMENT OF CONFIDENTIALITY:
All information which permits the identification of the individual will be held strictly confidential, will be used solely by persons engaged in, and only for the purposes of the survey, and will not be disclosed or released to other persons or for any other purpose.

PHS-T407-4
REV. 8-68

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
U.S. PUBLIC HEALTH SERVICE

Form Approved
Budget Bureau No. [illegible]

CONFIDENTIAL: All information which permits the identification of the individual will be held strictly confidential, will be used solely by persons engaged in, and only for the purposes of the survey and will not be disclosed or released to other persons or for any other purpose.

SURVEY OF OPTICIANRY MANPOWER

1. Is your name correct, and is the address above your **PRIMARY PLACE OF BUSINESS?**

1 ☐ Yes 2 ☐ No

If no, please enter the correct information below:

Name: ____________________
First *Middle* *Last*

Primary place of business: ____________________
Name of business

____
Number *Street*

____
City *State* *Zip Code*

> If you work at several locations, you may receive more than one questionnaire. If you have already returned a questionnaire, please complete item number (1) above, check this box ☐, and return this questionnaire in the envelope provided.

2. In what year were you born? ____________ *(Year)*

3. Where were you born? ____________ *(State or foreign country)*

4. Are you a citizen of the United States? *(Please check appropriate box)*

1 ☐ Yes, Native Born
2 ☐ Yes, Naturalized
3 ☐ No

5. Sex:

1 ☐ Male
2 ☐ Female

6. Please check the **HIGHEST YEAR** of education you have **COMPLETED**: *(Check one)*

HIGH SCHOOL
☐ 1 year or less
☐ 2 years
☐ 3 years
☐ 4 years

COLLEGE OR UNIVERSITY
☐ 1 year
☐ 2 years
☐ 3 years
☐ 4 years
☐ 5 years or more

7. **What education and or training in opticianry have you had?**

(Check all that apply)

	Name of Organization or School	City and State	Attended From: Mo. / Yr.	Attended To: Mo. / Yr.
1 ☐ Education in opticianry *(Include military training)*			/	/
2 ☐ Registered apprentice program			/	/
3 ☐ On-the-job training			/	/
4 ☐ Other training or education in opticianry			/	/

8. **Approximately how many years have you worked in opticianry?**

______________ *(Number of years)*

9. **Do you consider yourself to be a:**

(Check all that apply)

1 ☐ Dispensing optician

2 ☐ Optical mechanic

3 ☐ Contact lens technician

4 ☐ Other - *(Specify:* ______________________________ *)*

10. **Are you CURRENTLY ACTIVE in opticianry?**

1 ☐ Yes, Full-time
2 ☐ Yes, Part-time

PROCEED to question 11.

3 ☐ No, Not active in opticianry
4 ☐ No, Retired

STOP!
Remainder of questionnaire does not apply. Please return questionnaire in the envelope provided.

11. Which ONE of the following categories best describes your PRINCIPAL place of employment? *(Check one)*

1 ☐ Retail optical establishment *(Not part of a larger establishment)*
2 ☐ Department store optical department
3 ☐ Optometrist's office
4 ☐ Ophthalmic goods wholesaler
5 ☐ Clinic *(Not in a hospital)*
6 ☐ Hospital
7 ☐ Other *(Specify:* ______________________________ *)*

12. In your PRINCIPAL place of employment, indicated in Item 11 above, are you PRIMARILY: *(Check one)*

1 ☐ Self-employed
2 ☐ Salaried employee *(Other than in military)*
3 ☐ In the military service
4 ☐ Other *(Specify:* ______________ *)*

13. What is the total number of locations at which you currently practice opticianry?

____
(Number of locations)

14. How many WEEKS per year do you usually work at opticianry? *(Do not count vacations as weeks worked.)*

____
(Weeks per year)

15. How many HOURS per week do you usually work at opticianry?

____
(Hours per week)

16. APPROXIMATELY what PERCENT of the hours per week indicated in Item 15 above, do you usually spend in each of the following activities?

a. __________ % Shop work
b. __________ % Fitting, adjusting, and dispensing eyeglasses
c. __________ % Fitting, adjusting, and dispensing contact lenses
d. __________ % General office work
e. __________ % Administration *(Excluding general office work)*
f. __________ % Research in opticianry
g. __________ % Teaching opticianry in a school or university
h. __________ % Other *(Specify:* ______________ *)*

100 % TOTAL

COMMENTS – General comments are invited as well as comments on specific items:

PLEASE RETURN QUESTIONNAIRE IN THE STAMPED ENVELOPE PROVIDED.

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Formerly Public Health Service Publication No. 1000

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